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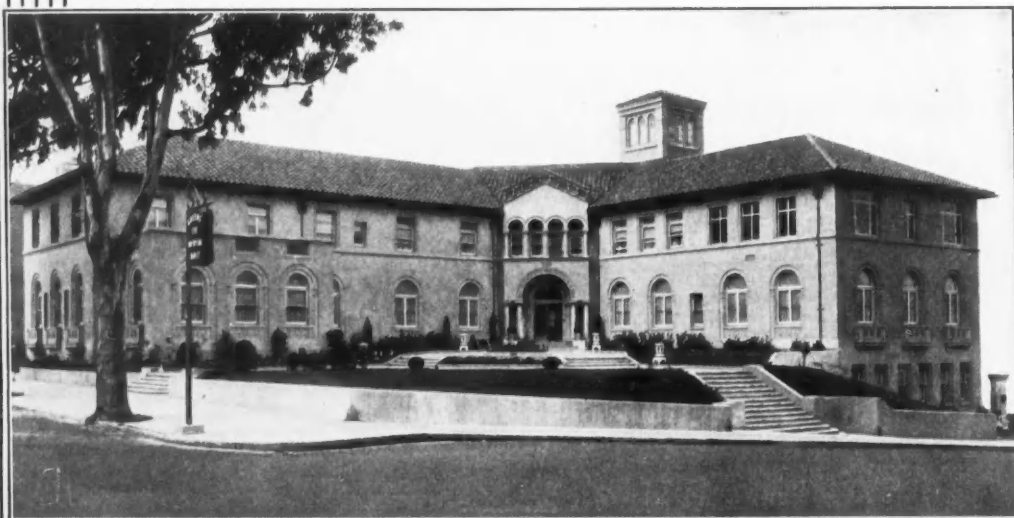
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VOLUME XXXII

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No. 3

ASCHHEIM-ZONDEK TEST FOR PREGNANCY—ITS PRESENT STATUS*

By HERBERT M. EVANS, M. D.
AND
MIRIAM E. SIMPSON, M. D.
Berkeley

IN 1926 Bernard Zondek and, almost immediately thereafter, our former associate, P. E. Smith, discovered that the implantation of small bits of the anterior lobe of the hypophysis would provoke sexual maturity in immature animals. When the animals are taken on the day of weaning, these remarkable changes can be produced within four days. A simple chain of reasoning led S. Aschheim, an associate of Zondek, to discover that the same chemical substance which in hypophyseal implants so rapidly matures animals is unusually abundant in the body fluids (blood and urine) during pregnancy. It has been known since the classical work of Erdheim and Stumme that the anterior hypophysis hypertrophies in pregnancy. Zondek had just previously shown that the ovarian substance, folliculin, occurs in high concentration in the body fluids of pregnancy. It was therefore natural to inquire whether the new hypophyseal hormone was not also similarly abundant in pregnancy. Their positive findings were quickly extended by the Berlin investigators and now constitute perhaps the most reliable known test for pregnancy and the only reliable early test.

TEST WORTHY OF USE IN GENERAL PRACTICE

It seems remarkable that the medical profession of this country has not made wider use of the Aschheim-Zondek test for pregnancy. This is the justification offered for a survey of the present status of the test. An attempt will be made to discuss briefly both the technique of the test as used by the discoverers and by others, the accuracy or dependability of the test and the sphere in which the test is useful.

TECHNIQUE

As used by Aschheim and Zondek¹⁻¹⁰ the test is performed as outlined below.

The morning urine is sent into the laboratory in clean bottles. They recommend the addition of one drop of tricresol per 25 cubic centimeters of urine if it is necessary for the sample to be sent by mail. A group of five mice, each weighing six to eight grams, is used to test each urine specimen. The total volume of urine injected into each mouse varies from 1.2 to 2.4 cubic centimeters. This total dosage is distributed in six doses during forty-eight hours. It is administered subcutaneously in increasing amounts of 0.2 to 0.4

cubic centimeters each. On the fifth day, *i. e.*, ninety-six to one hundred hours after injections are begun, the animals are autopsied and the genital system is examined, preferably with a hand lens or binocular microscope. The ovaries of untreated animals of this age are always very small smooth glandules, containing, at most, small follicles. In case the ovaries show further development, the type of reaction can be classified as follows, according to Aschheim and Zondek:

Reaction I—Enlarged follicles.

Reaction II—Hemorrhagic follicles—"blood points."

Reaction III—Corpora lutea.

COMMENTS ON REACTIONS AND TECHNIQUE

The presence of Reaction II or III, or both, is an almost certain indication of the presence of the anterior hypophyseal sex hormone in the urine, characteristic of pregnancy in the case of human beings. The reaction is considered positive if only *one* hemorrhagic follicle or *one* corpus luteum is observed in one experimental animal, that is, if either Reaction II or III, or both, are present in any one of the five animals used for the test for pregnancy. However, if Reaction I is given and the animals show evidence of heat (cornification of the vagina and enlarged uterus), the test is repeated with a second sample of urine.

If there is urgent reason to get results in an interval shorter than five days, the Berlin investigators increase the number of experimental animals used in the test and autopsy them in sixty to seventy hours. By this method they cut down the inaccuracy introduced by the variability in reaction of individual mice, and feel they can reach fairly accurate conclusions. The ovaries are studied in serial section if for any reason the macroscopic findings are dubious.

The modifications in technique introduced by other workers have not been numerous; most workers have adhered closely to the conditions of the test as prescribed by the discoverers. Kraus¹⁴ of Prague shortens the test somewhat by autopsying on the fourth day and examining the ovaries in glycerin under the microscope. He believes he can recognize the development of hemorrhagic follicles and corpora lutea at an earlier stage by this method than by macroscopic observation.

Some workers, *e. g.* Mayer²⁵ and Vogt²² do not trust macroscopic findings, but always study stained serial sections.

METHOD USED AT UNIVERSITY OF CALIFORNIA

In the laboratory at Berkeley, sexually immature rats have been substituted for mice with satisfactory results. The test as performed is as follows: The morning urine is neutralized, fil-

* From the Anatomical Laboratory of the University of California.

tered and, during the test, stored below 0 degrees C. so as to be actually frozen. Six rats, twenty-four to twenty-six days of age, weighing forty to fifty grams, are injected to test each urine. Each rat receives a subcutaneous dose of one cubic centimeter daily for four days (Monday, Tuesday, Wednesday, Thursday). The animals are autopsied ninety-six hours after beginning the injection (Friday). The ovaries are examined under binoculars, eventually dissected free from the oviducts, and weighed. If observations are made by immediately swinging the binoculars over the opened body of the animal with the ovaries *in situ* and only the bursa ovarica opened but the blood supply left intact, then the detection of corpora lutea is much facilitated. The positive test for pregnancy in the rat is the presence of corpora lutea—Zondek's Reaction III. Hemorrhagic follicles, Reaction II, are not common in the ovaries of precociously matured rats. Though the expense of maintenance of a rat colony is greater than that of a mouse colony, and rats would not have been used except that our colony was established, use of the rat has, however, one advantage. Rats are sturdier than mice. Zondek and Aschheim have 15 per cent mortality among their urine-injected test animals. So far we have lost no animals from use in the test.

ACCURACY OF THE TEST

The error involved in the Aschheim-Zondek pregnancy test is small enough to admit the test as a most important diagnostic aid. Twenty-four groups of workers and over three thousand tests are cited in Table 1. In almost no cases did the error exceed two per cent; in fact the majority of workers have found the error to lie between one and two per cent.

TABLE 1.—Accuracy of the Aschheim-Zondek Pregnancy Test

Investigator	Number of Cases	Percent-age Error
Ascheim and Zondek, ¹⁻¹⁰ Berlin.....	1000	1.2
K. Ehrhardt, ¹¹ Frankfurt.....	400	2.
E. Solms and E. Klopstock, ¹² Berlin.....	349	1.
F. Wernbter and E. Schultze, ¹³ Wien.....	30	0
E. J. Kraus, ¹⁴ Prag.....		
Brühl, ¹⁵ Göttingen.....	192	0 pregnancy cases 3.75 non-pregnancy cases
Martius, ¹⁶ Göttingen.....	51	1.2 Pregnancy cases 0 non-pregnancy cases
Praude, ¹⁷ Moscow.....	100	
Brouha and Simmonet, ¹⁸ Paris.....	30	
Odeschati, ¹⁹ Italy.....		
Louria and Rosenzweig, ²⁰ New York.....	86	1
H. E. Kaplan, ²¹ Stockton.....		
Siebkke, ²⁴ Kiel.....	51	0
Füth, ²⁵ Köln.....	139	1
Hornung, ²⁶ Berlin.....		2
Kriele, ²⁷ Berlin-Neukölln.....	12	8
Schmidt, ²⁸ Düsseldorf.....	171	0
Pankow, ²⁹ Freiburg.....		0 in normal pregnancy
Gragert and Wittig, ³⁰ Greifswald.....	46	0
Kehrer, ³¹ Marburg.....	97	1
Karg, ³² München.....	110	1
Esch, ³³ Münster Westf.....	49	0 except tubal pregnancy
Hellmuth, ³⁴ Würzburg.....	36	0 except tubal pregnancy
Total number of cases.....	3088	

All investigators who have applied the test have found it a reliable criterion for normal uncomplicated pregnancy. Many wish to say the test yields 100 per cent results in all normal cases, where applied after one or more missed menstruations. Several workers have noted a positive test seven to eight days, and one only three days after the first missed menstruation. Zondek cites two cases of young women who were tested before a menstruation had been missed. The test was negative for pregnancy, only large follicles were found in the ovaries of the test animals (Reaction I). When retested four to five days after the expected menstruation, the reaction was positive (II and III). Zondek's rationalization is that implantation must occur before the test becomes positive. The test continues to be positive throughout the remainder of pregnancy and persists to the seventh day of the puerperium. Zondek reports the test to be negative on the eighth day.

The errors recorded in the table are attributable to relatively few causes. The test is strongly positive in cases of hydatid mole, and remains so after removal of hydatid mole if only small fragments are left. Chorio-epithelioma also gives a positive reaction.

A few instances of inaccuracy have been reported in cases of tubal implantation. A positive test seems to be almost coincident with the persistence of life of the fetus, a point emphasized by Radtke³⁶ and others. Instances of a negative test, in cases later proved to be tubal pregnancies, were probably due to death of the fetus before the time of the test. Esch,³³ however, cites a case of tubal rupture in which a positive Aschheim-Zondek test was obtained two days after the fetus was expelled into the peritoneal cavity. In Schmidt's²⁸ experience the reaction in tubal pregnancy has always been positive except in two cases of old hematoceles.

In cases of abortion, positive results have been reported to occur as late as the sixth to the eighth day after abortion. The test has hence important medico-legal value. It is probable that the results from the test in cases of abortion and partial abortion depend, just as in tubal pregnancy, on the time of death of the ovum or fetus with respect to the time of the test.

Tests have been reported where large follicles (Reaction I) were found after the injection of urine from nonpregnant women in whom carcinoma was present, but such a finding should not be counted among the errors of the method, as a pregnancy diagnosis is never based on Reaction I.

No conditions save pregnancy and its associated phenomena have given Reactions II and III, and among the conditions which have been investigated have been uterine myoma, carcinoma of the body of the uterus, tumor of the adnexa, cystoma, x-ray amenorrhea, unexplained amenorrhea, hypophyseal tumor, and acromegaly.

In summary of the accuracy of the test it can therefore be said: A positive Aschheim-Zondek test is not only given by pregnancy but by hydatid mole and by chorio-epithelioma. A negative test is an almost certain indication of the absence of

pregnancy, at least of pregnancy of longer duration than one month.

IMPORTANCE OF THE TEST—THE APPLICATIONS

Of first importance in the applications of the Aschheim-Zondek test is the early diagnosis of pregnancy—before clinical signs are available or dependable. This is not the only clear indication for the test.

Of next importance is the use of the test in the differential diagnosis of cases in which pregnancy is simulated; for instance, the differential diagnosis between cystic myoma and pregnancy as cited by Wagner.²³ Clinically this case simulated pregnancy. After opening the peritoneal cavity the enlarged uterus was not distinguishable from a normal pregnant uterus. Even when the mass was incised a bag of fluid was encountered similar in appearance to fluid-filled fetal membranes. The uterus was removed, however, because of two clearly negative Aschheim-Zondek tests which had previously been performed. Section of the uterine mass showed a cystic softened myoma.

The test has been suggested as an aid in the detection of the death of the fetus, but the results, at least those reported by Esch,³³ do not confirm this hope. He finds too great a lag after the death of the fetus to make the test valuable. In one case of a seven-month pregnancy reported by him, the heart of the fetus was not audible. For this reason they believed the fetus to be dead. Ten days after this observation the Aschheim-Zondek test was positive. Four days later a macerated fetus was expelled. In another case of incomplete abortion the test was positive eight days after expulsion of the products of gestation. Schmidt²⁸ describes a rapid disappearance of the test after spontaneous abortion of a fetus dead from syphilitic or renal disease in the mother, but by rapid disappearance he means a negative reaction six days after abortion.

The test promises to be of importance in the diagnosis of hydatid mole and chorio-epithelioma. In cases where the test remains positive too far into the puerperium (*i. e.*, after seven days) or too long after abortion (*i. e.*, after six days), these pathological conditions need to be remembered. Zondek, Aschheim, Wagner,²³ and others emphasize the importance of following patients in whom hydatid moles have been removed by frequent tests as a check on the completeness of removal. Wagner and others find that repeated positive tests after removal of a hydatid mole, though indicating the need of very careful study, do not necessarily indicate the development of a chorio-epithelioma. If, however, the test becomes positive after an interval of negative tests—and pregnancy can be excluded—then the development of chorio-epithelioma is likely.

The fact that the urine from cases having a hydatid mole is so much more potent in anterior hypophyseal sex hormone than urine from cases of normal pregnancy suggests the minimum dose method as of possible aid in distinguishing between normal pregnancy and this condition. Only

one-tenth the usual dosage is required to give a positive test in cases of hydatid mole.

Just as the Aschheim-Zondek test is of aid in the differential diagnosis of pregnancy, so also it is of aid in the exclusion of pregnancy in the study of amenorrheas. The test has been found negative in each of one hundred and fifty-one cases of amenorrhea studied in the Charité-Frauenklinik, Berlin. As an instance of such use of the test a case will be cited from Zondek's discussion of hyperhormonal and oligohormonal amenorrheas. In some amenorrheas, hyperhormonal, the urine is characterized by large amounts of *folliculin*, but not of the hypophyseal hormone. Some of these cases have cystic follicles in the ovary. In the latter case the condition can be improved by expression of the cyst. Folliculin is excreted in increased amounts in the amenorrhea of pregnancy as well as in these peculiar amenorrheas of nonpregnant women. In the study of such a case, therefore, one would wish to be entirely sure of the absence of pregnancy by the use of the Aschheim-Zondek test.

SUMMARY*

1. The Aschheim-Zondek test is remarkably dependable in cases of normal pregnancy.
2. It is positive a few days after the first missed period.
3. The test is useful in differential diagnosis of pregnancy from other amenorrheas, tumors of the uterus, etc.
4. There is also a distinct province for the test in the diagnosis of hydatid mole and chorio-epithelioma.

Anatomical Laboratory, University of California.

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* It is to be hoped that the present summary will encourage routine use of the new test and that the technique of its performance is described with sufficient detail to encourage any diagnostic laboratory to include the test in the service it renders physicians. The equipment is very simple, but unfortunately involves a continuous supply of litters of the test animals (rats or mice) known with certainty to be not younger than twenty-one nor older than twenty-six days of age when the test is begun. Pending equipment of the usual laboratories for the test, as a convenience for the physicians of the state, and for a fixed charge, the anatomical laboratory of the University of California will continue to carry out the test in all cases requested. Merely 100 cubic centimeters of morning urine are required. If a postal journey of a day or longer is necessary, four drops of tricesol should be added to this quantity of urine. Otherwise any preservative is preferably omitted.

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THE FUTURE OF MEDICAL PRACTICE— MEDICAL SERVICE ORGANIZATIONS

By C. M. COOPER, M. B.
San Francisco

TODAY the individual practitioner of medicine works under many disadvantages. People are taken sick at night and suffer equally during holidays and over the week-end, as on other days. He is thus called upon to give a service which only the most enduring can satisfactorily render. When he is sick and during his vacations his expenses continue and his income ceases. Often he has little time to do the essential laboratory work and, to get the reports he requires, he has to send his patients from pillar to post. At times, much overworked and frequently poorly recompensed, he is also troubled in spirit, for he sees many patients who can ill afford to follow the advice he should give them and, however much he financially sacrifices himself, he can do little to prevent the high costs of serious sickness from crippling many of the families he attends. If successful, he, from small beginnings and after many years of practice, acquires a considerable following. If he then becomes incapacitated or dies, his office closes, no successor reaps the benefit of his labors, and those who have put their faith in him have as a body, no one to whom to turn. Physicians and patients thus jointly suffer and equally desire relief from such a situation.

To quite a number state medicine appeals as a remedy. This, if it comes, would mean that the

sick would be taken care of by the state and that physicians, surgeons, and nurses would become employees of the state.

If it were possible to evolve a plan in which politics and patronage played no part and which would continue to attract the same degree of intellectuality as the profession now attracts, there would be much that could be said in its favor. Past experience, however, with bureaucratic management of shipping, railroad, and public utilities business does not speak well for its likely success in this new field. Nevertheless there is a distinct trend toward it, and a social trend, like a secular trade trend, gains ever increasing impetus and wins ever widening support, unless the causes that lead to its inception be removed. Finally, it is apt to attain such a force that it is able to bring about a trial adoption of its tenets in spite of its disadvantages.

If the medical profession is to avoid such a contingency, it must take the lead in remedying the existing conditions. As the writer sees it a satisfactory plan must provide:

1. That all sick people can obtain competent medical and surgical service without undue delay.
2. That this must not cost more than the recipient can afford to pay.
3. That those who give the service would receive a just return for their work.
4. That the rendering of the service would not involve undue or excessive strain upon the members of the profession.
5. That it should remain possible for physicians and surgeons who achieve unusual success to earn incomes comparable with those of the leading lawyers and business executives in the same community.

With the above in mind, the writer visualizes a time:

1. When it will be the recognized duty of the state and municipality to provide such a service for all the indigent sick, and to pay those who give the service.
2. When the great mass of the people will pay a health rate just as they now pay a water or gas or electric rate, and that this rate will insure them competent ever available medical and surgical service. He hopes that private corporations, who in their standing and efficiency will compare with the great public utility companies, will arise to organize and develop and give this service. He questions whether the members of the medical profession alone are fitted by training, experience or bent to successfully develop or manage such corporations but believes that this could be successfully done if representatives of the profession associated with themselves men of the same order of training and intelligence as those who have developed the big life insurance companies. With such a system in existence, he would expect to see: (a) hospitals and service stations built on inexpensive sites; (b) corps of medical men of all types, on duty at, let us say, eight-hour intervals, giving their whole time to this work, they pre-

ferring a sure, adequate income and an old-age pension to the vicissitudes of private practice; (c) perhaps also a number who gave a certain appointed time each day to this work, they receiving in return compensation but no ultimate pension.

3. When there would still be room for men who preferred to try their fortune in private practice, and who would have the same opportunities as now exist, provided they could supply something which people believed they could not get elsewhere.

While the profession expectantly awaits such a plan, the writer believes its members could greatly improve existing conditions if they could see their way to group themselves into small unit service organizations. As he conceives them, each unit would do one line of work and would remain small enough to keep in human touch with all its patients. Thus there would be medical unit organizations and unit organizations pertaining to the specialties. Under such a system the individual members of each unit would have common offices and a common diagnostic and therapeutic armamentarium, thus considerably reducing expenses; and they would pool their service capacities, thus giving their patients an organized and ever available service. In the treatment of those needing both medical and surgical attention, corresponding units would work together and, if experience suggested that it would be of benefit to themselves and to their patients, units could, if they so desired, combine to form group service organizations.

Unit service organizations of the type outlined would probably fall into two classes:

(a) Those formed by older men who already had a considerable following. These older men would assume all the expenses and take in as their associates men who till then had not been in practice. They naturally would become the directors and develop their organizations.

(b) Those in which men of more or less equal age and experience assumed equal liabilities, shared the running expenses and pooled their service capacities. Whether the members of units of this type formed partnerships or loosely bound associations, whether they pooled and shared equally the returns or divided them according to the demonstrated earning capacity of the members, or whether a common secretary sent out separate bills for each member, would be matters of detail for a unit to decide for itself. The essential thing would be that the members combined to diminish expenses, to lessen professional strain and to give an organized service, and the unifying urge would be found in the people's demand for a type of service which the average lone practitioner is not able to give.

It is now six years since the writer decided to try to form one of these unit service organizations. At that time he had been in practice some twenty-five years, his work being of a diagnostic and advisory kind. Though the monetary returns had been amply compensatory, he had become

much dissatisfied with his system of service. Of its deficiencies he had been made very conscious by watching the working of a rather unusual type of service developed by a Japanese interpreter. This individual had been for many years bringing, and still brings, patients to the office. For them he acts as an interpreter and is paid by them for the service he renders. He is keenly interested in having his clients get well, knows what a complete clinical examination includes and means, and is anxious to have done all the laboratory work, etc., that is essential to the elucidation of the case. At specified times he brings back these patients to report. He has also on his list a number of surgeons and specialists to whom he takes his clients. These he has chosen because of their operative results, because they are habitually courteous to his people and because they are glad to accommodate their charges to the economic position of his clients. Further, he sees that a Japanese patient, taken acutely sick, gets competent service without undue delay. His people pay for the services immediately after they receive them; thus no accounts are kept and no bills are sent. This method saves bookkeeping expenses and permits a lesser charge to these patients. In other words, he has provided an economic, organized, collective and ever available service of a high type for his fellow nationals. The results obtained in the treatment of these patients—and the writer, in the course of years, has had hundreds under his care—have been extraordinarily good, this in a large measure being due to their interpreter's efficient shepherding.

The unit thus suggested has now been developed to such a point that its future seems assured and, since it has removed much of his former dissatisfaction, it occurs to the writer that it might be of value, if he said a few words concerning such a unit.

It has seemed preferable to build it gradually rather than to form it all at once, as the providing of service for which there is a demand is somewhat different from creating a demand for a surplus of service. In the former case the necessary expenditures can be freely and confidently made.

In any extensive system of unit formations, it is probable that individuals who were friends and of like professional habits would tend to group themselves together. In this unit the writer sought as associates men of whose work he knew and who were personally acceptable to him and to one another. He further considered it of advantage that they should have or acquire sufficient skill in the specialties to be able to recognize in these fields, if not the nature, at least the presence of, an abnormal condition, for such ability would enable them to save many patients unnecessary visits to the various specialists.

It is suggested that each prospective member act as an assistant for six months. During that time he can make up his mind whether or not he wishes to become a member of the unit, and the unit, in turn, can determine whether he is acceptable to them. If he leaves, it should be his privi-

lege to take with him the patients who prefer to continue under his care. It would seem a wise plan for the director and the associates to be privileged to terminate their relationship at any time, the leaving member again being permitted to take with him any and all patients who desire to follow him.

Four members seem to the writer to be necessary and adequate. The director, with his hospital and office consultation work and with his directing duties, can have little time for house visits, and so he cannot hope to substitute for an associate who may be absent. With three other members, however, two can, when circumstances demand, do the work ordinarily done by the three. Each one can thus get a satisfactory yearly holiday, and perhaps each one can have, every few years, an opportunity to visit distant clinics for special work. If four members be adequate, the addition of others would mean a desire to obtain a larger clientele, which should not be the primary aim of the organization. Moreover, with four members there should exist no difficulty in keeping in human touch with the patients and not a whit of this valued relationship should ever be organized or "department-stored" out of existence.

In considering the suitable location for a unit, it must be borne in mind that it will need plenty of working room, and that it should be situated where it is easy of access, with plenty of parking space in its vicinity. In many cities there is, on foot, a movement of the doctors away from downtown business districts where rents are prohibitive and where ever increasing congestion causes ever increasing delay. The writer believes that this is a wise plan and has followed it with satisfactory results.

If a unit of the type considered is to fulfill its purpose, its offices should be thoroughly equipped, diagnostically and therapeutically, in a modern sense. It will then be unnecessary to send ambulatory patients to hospitals for purposes of diagnosis and treatment. They will thus incur no hospital and no nursing expenses, and since in hospitals there are so many calls upon the diagnostic equipment, each call necessitating a preliminary appointment, the investigations at the office can be carried out much more expeditiously, and thus considerable time be saved to the patients. It should be the aim to extend this service so that in case of necessity bed patients can stay at home and yet have available the essential diagnostic and therapeutic facilities.

The number of nurses and technicians which a unit will need will depend upon the amount and kind of service it is called upon to give.

It would be of advantage:

1. If one of the nurses had had special training in a diet school so that she could be of help to patients, both in a dietetic and culinary sense.
2. If, when necessary, a nurse could be sent to the homes of bed patients for short periods of service, or to give instruction to the lay attendants who desire it.
3. If one of the laboratory technicians could

daily call upon the bed sick to get the required blood specimens, etc.

4. If one of the nurses and one of the technicians were on call for urgent cases over the weekend, the called individual receiving an equivalent time off during the following week.

Such a unit will need the services of a secretary and directress, who has a difficult position to fill, for she must be an economist and a conservator of the unit's supplies, an agreeable and acceptable supervisor, and a natural peacemaker, for quite an important part of her duties may be of a harmonizing nature.

These auxiliary members of the unit should receive salaries as large as those generally paid to corresponding workers in the locality of the unit. An additional yearly compensation is much more appreciated than the assurance of future benefits. The payment of such, particularly if the recipients will use it for insurance or investment purposes, is an excellent way of promoting satisfaction and of inculcating a habit of thrift and forethought for the future.

The service which a unit of this kind might consider giving can perhaps be classified into:

1. Service pertaining to the diagnosis and treatment of the ailments of private patients.
2. Service in the field of preventive medicine.
3. Near-free and free service.
4. Educational service.

SERVICE PERTAINING TO THE DIAGNOSIS AND TREATMENT OF AILMENTS OF PRIVATE PATIENTS

In quite a percentage of patients a complete clinical examination and the examination of the blood and excretions will be all that is necessary for the elucidation of the case. Merely inquisitive diagnostic procedures should, of course, be discontinued. In a few persons a most intensive investigation, which will require all the modern procedures and methods, will be essential. Between these extremes there comes the large majority of patients who need investigations of varying extent.

The director will have to determine what is a fair and legitimate charge for these different kinds of investigation, and this will depend upon the economic standards in the locality of the unit and upon the extent, nature and value of the services rendered.

The charges made for taking care of grave and acute cases and for special therapeutic procedures will depend upon the nature of the work, the difficulties encountered, the time consumed and the responsibilities involved. It being a good working principle never to charge more than fair-minded patients consider just and within their means to pay.

Many patients have employees or unrelated dependents whom they desire to help to get the same kind of investigation that they received. It would be in keeping with the spirit of a service

organization for it to meet such patients halfway and to itself absorb half the usual charge, it sending to the employer a bill so figured.

The writer has already referred to the service which the Japanese interpreter seeks for his fellow nationals. A unit could well render a similar service to others of like economic situation for an equivalent fee.

SERVICE IN THE FIELD OF PREVENTIVE MEDICINE

Preventive medicine, in its application to communities as a whole, is largely of federal, state, or municipal concern. Antityphoid inoculations, antismallpox vaccinations, antidiphtheria and anti-scarlet fever injections, which belong to this field, come, however, within the province of practicing physicians. It might well be the duty of one of the members of the unit to keep in touch with the public health situation of the locality so that the unit's patients can at once be given the benefit of any information or procedure that may have preventive value.

But there is a further development of preventive medicine which is coming more and more into use and which consists in the early recognition of incipient disease and the institution of methods to prevent or hinder its further progress. Its principle depends upon the examination of supposedly healthy people, and this at such recurrent intervals as to preclude the probability of the development in the interims of an irremediable condition. Many corporations who have a considerable number of indoor employees are coming to recognize the advantages to the employees and the economic value to themselves of such periodic examinations. Perhaps the writer may be permitted to illustrate.

For six years the unit has examined annually all the employees and applicants for positions in one of the large banks of this city.* Most of these employees consider themselves healthy and, on inquiry, have few or no complaints. They come at prearranged hours, they are examined clinically just as thoroughly as are any other patients, and a routine examination of the urine and of the blood—which includes the serum reactions—is made. If upon any individual a further diagnostic procedure is indicated, that is also permitted by the bank. A complete record of the first examination is made and kept, and to this are added the findings of succeeding years. A short report of the findings, with comment, is sent to the bank. The bank gives a copy of his or her report to the employee. The employees are left at liberty to decide whether or not they wish to follow the advice given. No attempt is ever made to induce them to become patients of the office, but quite frequently it is suggested that they present the reports to their own physicians.

Because of the number involved, because they come at prearranged times, and because of the

large proportion who have little or no disease history, a rate can be made which will appeal to corporations as eminently fair for the kind of service that is given. For the reexamination, a fee of one-half the amount charged for the first examination is made.

The unit has reason to believe that these examinations have been of much value to the bank and to its employees, and other business organizations have recently expressed their intention of availing themselves of a similar service.

Only a small proportion of the time of a unit, such as this aims to be, can be given to such work, but the writer believes there is likely to be a rather widespread call for such service, and that a medical unit is well adapted to render it.

Similarly, more and more individuals are requesting the same kind of service and it seems only rational to assume that in time such periodic examinations will become the rule.

NEAR-FREE SERVICE

The formation of unit service organizations of the kind outlined is, of course, no solution of the crying need for inexpensive yet efficient medical and surgical service for the great mass of people. For a time this organization welcomed this class during its office hours, though recognizing their inability to pay a proper return for the work done on them. A continuation of this policy would have rapidly resulted in the economic failure of the unit. Then, an attempt was made to render this service one night a week, the unit also arranging that friendly specialists and a druggist kept the same evening hours. This plan was not a success, and now each member of the unit is, like other individual physicians, trying to help those members of this class who seek his aid in the best way he can.

FREE SERVICE

The free service that the medical profession renders may perhaps be classified into involuntary free service and voluntary free service.

INVOLUNTARY FREE SERVICE

There is quite a percentage of people who do not and will not pay for the medical and surgical service they have requested and received, though they are well able to do so. They seemingly take advantage of the reluctance of doctors to make use of legal procedures, and apparently experience no shame in eluding their incurred just medical obligations. Judging from circulars lately received, a praiseworthy attempt to list these undesirables is in prospect. Such listing would lead to their gradual elimination.

VOLUNTARY FREE SERVICE

The rendering of free medical and surgical service to those in need has ever been, in the minds of the profession at large, a valued privilege. No unit or organization would be willing to forego

* Instituted by Mr. J. J. Fagan of the Crocker First National Bank.

its share of this privilege. The problem is how best to do it for the benefit of the local community. In a community in which there is a scarcity of free clinics, the unit might advantageously initiate such a clinic, but in a community where an abundance of organized well-conducted free clinics already exist, it is, the writer believes, a better policy for the associate members of the unit to give their time at one of these clinics.

EDUCATIONAL SERVICE

It is only necessary to listen to lay people as they express their views concerning symptoms and ailments to recognize how much there is for education to do. Meanwhile cults and quacks flourish, and among their patrons and followers are lawyers, bankers and business men of high position, and apparently the more extravagant the curative claims for useless articles and products the more rapidly do they sell. Commendable books and popular lectures and magazine articles make but slow progress in modifying the wishful beliefs that the mass of the people possess. Physicians in general have been so busy in their more urgent work that perhaps they have not been able to make full teaching use of their unique relationships. If patients were shown how closely interlocked are the vertebrae of an articulated skeleton, there would be less belief in the frequency of vertebral "slips," and if they were taught a few simple anatomical and physiological facts there would be less acceptance of the healing virtues, in serious sickness, of so-called adjustments. If they were made acquainted with the simple principles of dietetics there would be fewer followers of harmful fad diets. And if they were taught a right and helpful psychology there would be fewer devotees of the various cults.

Efforts in these directions are well worthy of trial, and in a unit organization there could well be a systematic endeavor along these lines, it ever being remembered that a sympathetic tolerance, an earnest sincerity and an utter simplicity of the spoken and written word are essential to success.

There is perhaps another educational service which units could advantageously render. In the medical schools the students of today are excellently taught the science of medicine. They have less opportunity to acquire its humanizing art, and still less to become acquainted with the many problems that beset its practice. Chosen units might well serve as prepractice schools to give to near and recent graduates these opportunities.

In formulating a working plan, the director of the unit must realize that at first most of the patients who come to the organization come to consult him. They will appreciate it if he personally sees them, takes the history, clinically examines them and maps out the necessary laboratory and technical work. When all the required data are at hand, he asks an associate to see the patient with him. He rapidly summarizes the history, the

clinical, laboratory and technical findings, and the diagnostic possibilities. The associate is then asked to suggest the most advantageous line of treatment, and a definite program is outlined. The associate is then requested to initiate the program and to take charge of the patient. The patient is told that the associate is at his call day and night, and that the director, in turn, without additional charge, is at the associate's call, and that the two of them will thus attend him. The readiness with which the patient accepts this arrangement will largely depend upon the attitude of the director toward the associate. If it be an attitude of superiority, he cannot expect to instill the necessary confidence in the patient, but if it be one of medical comradeship, no difficulty occurs. Gradually the patient becomes acquainted with the other members of the unit and thus he feels he always has, in time of need, someone he knows to whom to turn. The patient, if he be later taken acutely sick, is almost sure to send for the associate, and it is the experience of this unit that he is very apt to refer his sick relatives and friends to the same associate.

It is perhaps unnecessary to say that there should be no patients whom the director is not glad to have his associates attend, however rich and influential they may be, and no patients, however lowly their circumstances, whom the director is not more than willing to see with the associates.

The director of this particular unit has found it of advantage to spend Sunday mornings making rounds and calling upon the patients who are sick with the associate who happens to be on duty, no charge being made by him for his accompanying the associate. The associate members, in their turn, will make one another acquainted with the patients whom they are attending, and will naturally assist one another in any work that requires a combination of efforts.

In considering the incomes which they should receive the director should endeavor to always make them larger than they would be apt to receive after a like number of years as lone practitioners in that locality. If they leave at any time, they, as previously mentioned, should be privileged to take with them any patients who desire to follow them, and those who have rendered efficient service will naturally take a goodly following. Such an arrangement is perhaps to the disadvantage of the director, since the associate could leave and take with him not only the patients who have come to him personally, but also many who have been directly and indirectly placed under his care by the director. However, an understanding of this sort protects the associate and is evidence that the director is seeking him in good faith as a permanent associate and successor. To enable both parties to make other connections, a three months' notice of an intended severance should be given. As an incentive to keep intact a satisfactory functioning unit, an arrangement, to take effect upon the death or retirement of the director, which should be defi-

nately favorable to the associates, might well be provided. If, however, after the organization has been completely built and is working smoothly, the associates should prefer to become junior partners, it should be the aim of the director to evolve a plan which would fully satisfy their aspirations. This has been done in this particular unit, and it is arranged that the successive directors automatically retire on reaching the age of sixty-five, though, if the retiring director should still desire to work, it would seem practical for a successful unit to continue to use him for some years in a consultant capacity.

As the unit develops the question will probably arise, should it endeavor to attach to itself a surgeon and other specialists, thus entering the field of group medicine? The director of this unit is afraid that by doing so it would lessen its capacity to render the kind of service for which it was formed. Much rather would he prefer to work with a similarly constructed surgical unit with which he had no economic connection. At the present time, being located in a large city, the unit is able to choose from a large field of competent surgeons and specialists those with whom it can work to the best advantage of its patients, and this privilege its members would be unwilling to forego.

Units, to continue to exist, must be financially successful. To insure this it is necessary that they be conducted with the same regard for economy as are the higher types of business organizations. A capable directress can aid much in this direction, and the patients themselves can cooperate by meeting their accounts with the same promptness that they attend to their other financial obligations.

The organizing capacity of an individual is evidenced by his ability to create an organization which can dispense at any time with the services of any member without losing any of its efficiency. A director of a unit service organization can feel he is really successful in his efforts when he has brought it about that he himself is no longer essential to its efficient carrying on. When that occurs the unit will approximate type "b."

In conclusion, the writer would like to say to older physicians that the formation of a unit of the kind considered is well worthy of their consideration, for—

To the director it brings the consciousness of a larger usefulness and, through daily association with younger men, tends to keep his mind plastic and youthful.

To the associates it gives the opportunity to practice their profession under ideal conditions, it brings them in daily contact with one from whom they can learn something at least of the "art of medicine," and, to those who perform their duties efficiently, it assures a bright future.

And to the patients it brings a service organized, relatively economic, collective and ever available.

2000 Van Ness Avenue.

ECZEMA—SOME RECENT CONTRIBUTIONS TO ITS STUDY*

By SAMUEL AYRES, JR., M. D.
Los Angeles

DISCUSSION by Irving R. Bancroft, M. D., Los Angeles; C. Ray Lounsberry, M. D., San Diego; Hiram E. Miller, M. D., San Francisco; Stanley O. Chambers, M. D., Los Angeles.

A REVIEW of the literature during the past five years reveals the fact that an astounding wealth of new ideas has greatly broadened our conception of the clinical entity known as eczema. In using the term "clinical entity," I wish to emphasize a fact which has been pointed out many times but which is frequently ignored, that eczema is not a disease entity in the sense that diphtheria, smallpox, or tuberculosis are disease entities, but rather is a clinical symptom with multiple etiology in much the same category as a headache.

Much unnecessary debate has been waged over the relative value of the terms "eczema" and "dermatitis." Either diagnosis would be inadequate without a parenthetical notation of the etiology, if known, or a definite statement of "cause undetermined" in cases of obscure etiology. Since the word "dermatitis" means literally inflammation of the derma, a definition which is broad enough to include erysipelas, carbuncles, and many other non-eczematous inflammations, it would seem that eczema or eczematoid dermatitis might convey more specific information.

When one considers the varied stages through which a typical case of eczema may pass—pruritus, erythema, edema, vesiculation, exudation, crusting, subsidence, desquamation, with the occasional development of papules, pustules, or lichenified thickening, and the necessity of varied treatment according to the stage presented by the individual patient, it is small wonder that eczema constitutes one of the major problems not only for the dermatologist but for the general practitioner as well.

BASIC PRINCIPLES IN DIAGNOSIS •

Let it be repeated that no case of eczema may be regarded as properly treated unless the diagnosis includes a definite statement of etiology either known or undetermined; which implies that a careful search has been or will be made in order to determine the cause, which may be either an external irritant such as some chemical or physical agent, bacterial or fungus infection, or some constitutional disorder of a functional or organic nature. Aside from mere curiosity, the rather obvious reasons for determining the etiology of the eruption are that the attack for which the patient comes for treatment may be more rapidly cleared up, that recurrences may be prevented, and that possible underlying constitutional disorders of which the cutaneous manifestation may be a signal may be discovered and remedied.

The first problem, then, which confronts the physician who is dealing with a patient with

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eczema is to know when to be an internist and when not to be. If one were to apply every known diagnostic test to every patient presenting an eczematous eruption, very few patients would have the money or the perseverance to go through with the examination. A careful history and cutaneous inspection will often, but by no means always, indicate the appropriate line of investigation.

Eczemas which have sharply defined borders and which give a history of having begun with one or two small lesions which have gradually enlarged and multiplied suggest an external infection, due either to bacteria, yeasts, or ringworm fungi. The picture known as epidermophytosis, characterized by scaly or vesicular eruptions of the hands, feet, or genitocrural region, can be confirmed by finding the ringworm fungus in direct microscopic examination of scales or excised vesicles. Failure to find the organism should serve as a warning against too vigorous treatment, since, as Mitchell¹ points out, many of these cases may be due to bacteria or to toxic causes. The eczematoid condition known as dysidrosis or pompholyx may closely simulate epidermophytosis. Recently C. J. White² and Cleveland White³ have pointed out that many of the cases hitherto regarded as toxic eczemas were in reality due to a very small yeast-like organism, the *Cryptococcus*, and that treatment instituted along the lines indicated, as the result of microscopic examination, has converted many hitherto obstinate cases into conditions that have promptly cleared up. This work is so new that it has had very little confirmation, but the character of the men who brought out these pictures justifies the belief that a major contribution has been made to dermatology. Many of the dry, scaly types of eczema, especially flexural eczemas, apparently belong in this group.

SOME LOCALIZED ECZEMAS

Hand Eczemas.—Eczemas which are confined to the hands are often caused by local chemical irritants; a complete list is almost unattainable since almost any substance may constitute an external irritant in a susceptible individual. Every day, however, new items are being added to the list of local irritants. Some of the irritants most often met with include paints, dyes, polishes, oil products, lacquer, novocain, formaldehyd, primrose, various vegetables and plant leaves and fruit juices, and ink. Very recently E. A. Oliver⁴ reported a series of fifteen cases of an eczematous eruption of the face and hands due to rotogravure ink in the pictorial supplement of the Sunday paper. Cole⁵ has compiled a list of cosmetics which may produce eczematous eruptions about the face, head, and neck. Many hair dyes and tonics contain such irritants as lead acetate, mercury, wood alcohol, paraphenyldiamin, resorcin, phenol, salicylic acid, silver compounds, and pyrogallol acid. Skin bleaches may contain high concentrations of mercury; face enamels often contain lead and bismuth, but even such ordinarily harmless substances as orris root or rice powder

may provoke an eczema in an individual hypersensitive to these proteins. Depilatories usually contain calcium or barium, and eyelash mascara may contain paraphenyldiamin. Face or lip rouge is sometimes colored with an anilin dye.

Neck Eczemas.—Eruptions about the neck may be due to a fur which has been dyed black with paraphenyldiamin, or brown with quinone, or may be due to the roughness of a wool scarf. Some eczemas of the face and exposed parts of the neck and arms are caused, in part at least, by hypersensitiveness to the ultra-violet rays of the sun. This suggests the caution that must be exercised in treating eczema with quartz light.

The predilection of an eczema for the face or hands does not necessarily prove that the cause is external, but should at least serve as a stimulus to rule out such a cause. Such eczemas may be seen in individuals who possess delicate skins and are addicted to daily hot soap and water baths, especially if they have passed middle life and the season happens to be winter. The cases that began as scabies, or fungus infections that have become converted into eczema as the result of too strenuous treatment, must also be remembered.

Eczemas from Constitutional Causes.—The history may at times serve as a valuable clue to the eczemas of constitutional origin; but is often of no help. Beinhauer,⁶ in a series of one hundred and fourteen private cases of eczemas in which series he excluded infantile eczema and any case in which an external causative factor was known, found that every patient revealed some definite constitutional disorder of which impaired function of the excretory or metabolic systems were the commonest; whereas 23.6 per cent of a series of one hundred and fourteen cases of non-eczematous dermatoses revealed constitutional disorders.

PROTEIN HYPERSENSITIVENESS

A history of repeated attacks of eczema since infancy, especially if accompanied by allergic manifestations in the patient or the family, such as eczema, urticaria, hay fever, or asthma, should immediately suggest the possibility of protein hypersensitiveness and should call for a complete testing of the food proteins. Occasionally brilliant results will be achieved by isolating one or more offending proteins and excluding them from the diet. On the other hand, disappointment may be the only result of such an investigation.

A careful checking over of the entire gastrointestinal tract may reveal the hidden pathology. Alden⁷ has recently reported two cases of generalized eczema of several years duration in whom marked improvement followed the removal of pathologic gall bladders. The gall-bladder dye test revealed the abnormality in both instances. Highman⁸ has recently reported a case of universal eczema of fourteen months duration which cleared completely within a few weeks following the removal of an infected kidney. Other foci of infection, such as teeth, tonsils, sinuses, prostate, appendix, large bowel, may also be possible sources of certain cases of eczema.

Gundrum⁹ has reported an interesting example of a case of eczema apparently due to what might

be termed a focus of irritation. The patient had suffered from a universal eczema as well as severe asthma for about ten years. Although no obvious infection was discovered in the sinuses, cocaine-ization of the sphenopalatine ganglion temporarily stopped both the asthma and the eczema on five separate occasions. Permanent cessation of both conditions followed alcohol injections of the ganglion.

Both Urbach¹⁰ and Ehrman¹¹ have found a low gastric acidity, in some cases amounting to an almost complete achylia, in more than half of a fairly large series of cases of eczema studied. The fractional method of gastric analysis was used. Waller,¹² however, in a much smaller series of cases found a predominance of hyperchlorhydria. It is easy to see how the failure of adequate gastric digestion might lead to the formation of abnormal or toxic metabolic products in the lower bowel. Failure of pancreatic digestion could do the same thing. Rueda¹³ reports a series of seventy-five cases of infantile eczema and seborrheic eczema which were cured in a striking manner within one to four weeks by the feeding of pancreas in tablet or pulverized form. The author has recently seen a striking example of such a result in a six-year-old boy who had suffered from severe and generalized eczema almost from birth, in whom many food proteins gave strongly positive reactions. Yet within less than two months after treatment began, the eruption disappeared completely on pancreatic substance, even though the diet indicated by food sensitization was not strictly adhered to.

Burgess¹⁴ feels that endogenous irritants, especially from the gastro-intestinal tract, in the form of amino-acids and other protein decomposition products, may produce eczema. Excluding histamin, which gives positive cutaneous reactions in almost everyone, he obtained positive reactions in 16.6 per cent of a series of one hundred and nine consecutive cases of eczema, against 2 per cent of a control series of one hundred and two non-eczema cases. Therapeutically such cases responded fairly well to *Bacillus acidophilus* cultures and small doses of salines, even in the absence of constipation.

A number of investigators^{15, 16} have established the fact that disturbances in the carbohydrate metabolism, as revealed by the glucose tolerance test, constitutes another important cause of eczema. In patients of this group the history is often valueless; a routine urine test is frequently negative for sugar, and a single fasting blood sugar determination may be well within normal limits. The author has seen several instances in which the fasting sugar was under 110 milligrams per 100 cubic centimeters, but in which values as high as 250 to 300 milligrams per 100 cubic centimeters were recorded in one-half to one hour after the oral administration of glucose. Usher and Rabenowitch¹⁷ have found glucose to be a normal constituent of sweat. The rate of excretion and the amount excreted were increased in cases showing a low glucose tolerance.

Schamberg and Brown¹⁸ found a high blood uric acid in 44 per cent of two hundred and eighty

eczema patients, and Michael¹⁹ in 40 per cent of seventy-five patients. In both series of cases improvement followed a low purin diet, although Michael does not feel that uric acid *per se* is a dermal irritant.

CALCIUM-POTASSIUM RATIO

Klauder and Brown,²⁰ in a series of studies extending over a period of four or five years, have contributed some very interesting data bearing on the calcium-potassium ratio in relation to cutaneous irritability. They regard eczema as "a pathologic process in which the cutaneous neuro-cellular mechanism is out of balance. The cutaneous sensibility in rabbits and cats was tested by applications of croton oil. The calcium and potassium content of the entire skin of the animal was determined, not merely the blood calcium.

Some of their more important findings were as follows:

1. Rabbits varied considerably in individual cutaneous irritability, but the degree of irritability varied inversely with the calcium content of the skin and directly with the potassium content in the majority of cases. Eighteen rabbits were used.
2. Blood chemistry. The cutaneous sensibility could not be correlated with the blood chemistry studies, especially calcium, but could be correlated with the skin calcium.
3. Diets. The cutaneous sensibility decreased after an all-green diet for ten days, increased after an oat and hominy diet; remained unchanged after one week of starvation. The cutaneous sensibility was correlated with the calcium and potassium content of the skin in the majority of cases.
4. Injection of calcium chlorid produced a striking decrease of cutaneous sensibility.
5. Injection of acids. The daily injection of N_{10} HCl and of 3 per cent solution of oxalic acid, which killed the animal, did not alter the cutaneous sensibility.
6. Nephritis and hepatitis. Experimentally produced nephritis and hepatitis resulted in a marked increase in cutaneous sensibility even before changes appeared in the blood chemistry.
7. Splenectomy, etc. Removal of the spleen, pancreas (one-half to three-fourths) and suprarenals caused no change in cutaneous sensibility even when death ensued from removal of both suprarenals.
8. Narcosis. Administration of chloral hydrate by rectum resulted in a striking decrease of cutaneous sensibility.
9. Injections of serum of eczema patients and normal individuals produced a definite decrease of cutaneous sensibility.
10. Injections of milk and sterile water gave conflicting results.
11. Injections of starch and sodium sulphate produced no change, but the injection of gelatin decreased the cutaneous sensibility.
12. Arsenic (neoarsphenamin) when injected in a sublethal dose caused a definite although not striking increase in cutaneous sensibility.
13. Injection of pilocarpin (stimulation of the parasympathetic or vagus system) led to an in-

crease in cutaneous sensibility. Autopsy after a series of such injections revealed a low skin calcium and a high skin potassium.

14. Injection of ephedrin (stimulation of the sympathetic) and atropin (paralysis of the parasympathetic) produced a decrease in cutaneous sensibility with autopsy showing a high skin calcium and a low skin potassium.

These experiments are to be regarded as introductory rather than final, and they open a new chapter in the study of cutaneous pathology. As far as they go, there seems to be some justification for the time-honored custom of administering calcium in certain cutaneous disorders such as eczema and urticaria. However, it has recently been shown that in order to secure a maximum absorption, calcium should be administered in rather large amounts (four or five grams) as a powder dissolved in water and given on an empty stomach, rather than as five-grain tablets after meals, as is frequently done.

OTHER STUDIES

Before concluding this review, mention must be made of the work of Throne, Van Dyck, Marples, and Myers,²¹ who have found arsenic in pathologic amounts in a large number of their patients with eczema. The arsenic can be acquired through medication, occupational contact, food contamination, and in unknown ways. In these cases of arsenical eczema, brilliant results usually follow the administration of sodium thiosulphate intravenously.

It is realized that the above remarks do not include all of the contributions to the study of eczema which have appeared during the past five years. Attention should be called to the work of Burnett,²² whose studies on the intestinal rate lead him to believe that some cases of eczema are due to faulty absorption of essential food elements due to a too rapid peristaltic rate; also to the observations of Klauder²³ on improvement in generalized eczema following therapeutically induced sleep; and the similar work of Lebedjew,²⁴ who produced marked benefit through intravenous bromid treatment. Much has been accomplished with nonspecific protein therapy by the injection of whole blood or other colloidal substances. Correction of glandular deficiencies, thyroid, ovarian²⁵ and testicular, have given satisfactory results in a few carefully selected cases. Pruritus and eczema ani have been reported as being caused in some instances by an idiosyncrasy to mineral oil²⁶ used in treating chronic constipation.

SUMMARY

A review of the literature dealing with eczema during the past five years emphatically reinforces the idea that eczema is a symptom complex having many possible causes both external and internal, and that treatment in order to be successful must be directed along etiologic lines. Notable contributions to our understanding of eczema include: experimental studies of calcium-potassium ratio with reference to the sympathetic-parasympathetic nervous system; observations on the carbohydrate and protein metabolism; on foci of

infection and foci of irritation; on the gastric secretion, pancreatic and other glandular deficiencies; sedative measures; local chemical irritants; and bacterial and fungus infections.

Enough has been said to indicate the need for highly specialized dermatologic knowledge on the one hand, and close cooperation with the practitioner of internal medicine on the other; with the constant assistance of the laboratory worker and experimental investigator, if the eczema sufferer is to find the relief which he seeks.

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DISCUSSION

IRVING R. BANCROFT, M. D. (812 Detwiler Building, Los Angeles).—Doctor Ayres' review of recent literature on eczema should remind us that there is a definite eczema threshold and that this threshold varies in different individuals and also, in the same individual, under different conditions.

As the author states, the different conditions which modify this threshold or this eczema susceptibility are

chiefly internal. Any glandular, excretory, digestive, or nervous dysfunction is liable to have the power of modifying the susceptibility to eczema. To ferret out the definite basic cause requires a profound knowledge of internal medicine, fortified by a knowledge of physiologic chemistry. The immediate cause of the eczema eruption is often very evident, but to find the cause of the lowered threshold is another and more difficult matter, and without a knowledge of the basic cause no permanent cure can be made. The mere prescription of an ointment is like stopping up the rat hole without trying to kill the rat.

It would be interesting to see whether, in the light of modern investigation, the theory originally promulgated by Brock that certain objective forms of eczema arise from certain definite etiologic causes will be proved. Can it be definitely stated that eczema which is characterized by a papulovesicular eruption comes from gastro-intestinal fermentation, that eczema characterized by excessive itching and lichenification comes from external irritants, or that the erythematous, scaly form comes from nutritional disturbances and an excess of alimentary nitrogenous products?

The very interesting animal experiments of Klauder and Brown would seem to indicate that starvation does not modify the cutaneous susceptibility to eczema, but we all know that the eczematous baby is a fat baby, and it is authoritatively stated that during the late war, in starving Germany and Russia, that eczematous eruptions were very rare.

Eczema, according to all these recent investigations, is merely a weathervane which should serve to point the way to further investigations so that the underlying causes may be found and remedied; and if possible, that further exposure to the immediate cause will not be followed by any troublesome eruptions of eczematous dermatitis.

✽

C. RAY LOUNSBERRY, M. D. (Medico-Dental Building, San Diego).—The author has presented my conception of the misnomer, "eczema." I have felt for years that this term was used to mask our ignorance in diagnosing certain skin lesions. Just as jaundice many times is a symptom of a deeper seated process within the abdomen, so eczema is a symptom complex of some underlying condition which manifests itself by oozing, inflammation, vesiculation, and pustulation, combined with itching. It is not a disease.

I especially appreciate the effort that Doctor Ayres has made in giving us the review of the literature on eczema, as it is presented today. These reviews show definitely the trend of the times in modern dermatologic thinking. Causation seems to be the keynote which is presented by most of the writers on this subject. For by going carefully into the etiology of all difficult cases, by using every known laboratory test, by giving the patient a good physical examination, then in diagnosing a given state, we can ultimately arrive at a conclusion as to definite treatment.

To illustrate this point: A patient came into my office complaining of all of the symptoms of a classical eczema. After a complete survey of her case from every angle by myself and my colleagues, her only positive finding was a bad pair of tonsils. She cleared up immediately after a tonsillectomy had been performed. Another case with the same classical symptoms cleared up after an old chronic appendix was removed. So it behooves us to go carefully into all of these cases, and by finding the causal foci of the trouble many times the symptoms of the disease can be relieved.

Working on such a theory, in those allergic cases which had associated with their eczema-like symptoms, hay fever and asthma complications, a blood calcium estimation was made. In a series of ten cases the blood calcium was below normal. These cases were treated with 10 cubic centimeters of sterile 10 per cent calcium gluconate solution (Sandoz) intravenously, until seven ampoules were given, after

which a blood calcium reading was made. The record proved that six of these ten cases responded to logical supplementary treatment in proportion to the rise in the blood calcium. The other four cases in the series were not helped by calcium therapy. I have observed very little benefit from calcium therapy when given by mouth.

✽

HIRAM E. MILLER, M. D. (384 Post Street, San Francisco).—Doctor Ayres has given us a good résumé of the recent studies on the etiology of eczema. In his preliminary discussion he includes under the heading of eczema, eruptions due to external irritants, due to fungi, yeasts, etc. From a didactic standpoint most authors prefer to classify these as dermatitis venenata, dermatophytosis, etc., and reserve the term "eczema" for an eruption of which the cause is generally not known, but is assumed to be an internal, constitutional one.

I am extremely interested in this type of investigative work, but have not found the practical application of it to be particularly helpful. One investigator will take one hundred cases of so-called eczema and find a low gastric acidity in one-half of them; another will find a preponderance of hyperchlorhydria in a similar number of patients, a dysfunction of the pancreas, a disturbed carbohydrate metabolism, a high blood uric acid, etc., etc. This reveals the various metabolic changes associated with "eczema" and perhaps the effect of the personal equation or the individual interests of the man doing this type of investigative work.

The number of eruptions classified as eczema have been greatly reduced in number in the past ten or fifteen years. This has been accomplished mainly by bacteriologic and allergic studies and not through biochemical investigations. However, I feel certain that this type of experimental work will ultimately solve some of the remaining etiologic problems of eczema, as the men that are most interested are well trained in biochemical and dermatologic investigation.

✽

STANLEY O. CHAMBERS, M. D. (1260 Roosevelt Building, Los Angeles).—Eczema still remains the dermatologic Waterloo for both the student and the practitioner of medicine. The bulging literature crammed with ideas, methods, drugs, and etiologic bogies is only too well known by those who constantly search for the light.

Most assuredly the presentation of Doctor Ayres gives the listener an appreciation that a certain relationship of metabolic processes to dermatologic consequences acutely exists. Yet a degree of uncertainty cannot fail to creep in where results are so inconsistent. The keynote would seem to be the absence of a single cause in the explanation for a disease which apparently is an entity in its clinical sense. Such a view has been held by certain of those engaged in the study of eczema and the allergic phenomena, and so far their work evidences a progression toward this very point.

I myself believe that the products of metabolism, normal or abnormal, are not the causes of eczema *per se*, but that such products disturb the balance of a more basic causative mechanism, which results in the cutaneous manifestations which we term "eczema."

If this be true the dermatologist will be no less an internist than he is now.

That knowledge which we now have at our command, knowledge given to us by investigators whose reports Doctor Ayres has so thoroughly reviewed, should be utilized.

✽

DOCTOR AYRES (Closing).—I appreciate the discussion which this review has stimulated. Another new contribution which was not mentioned in the paper or by the discussers is the fact that a fungus infection of the feet may produce a toxic vesicular or scaly eruption of the hands strongly resembling the original condition of the feet, but free of parasites.

CAPSULOTOMY METHOD OF LENS
EXPRESSION*

By DELAMERE F. HARBRIDGE, M. D.
Phoenix, Arizona

DISCUSSION by Lloyd Mills, M. D., Los Angeles; Dohrmann K. Pischel, M. D., San Francisco.

OPTHALMOLOGIC literature discusses from every conceivable angle the cataract problem. What the essayist writes may to some seem academic, or the repetition of mere platitudes. The very fact that so much has been written and that such a variety of measures have been proposed in the treatment of cataracts is inferential evidence that the ideal procedure has not yet been attained.

Of a conservative temperament and having developed in conservative medical surroundings and with the ever present thought that a patient's eyesight is the goal, the writer, perforce has elected the capsulotomy method, with a preliminary iridectomy, as the preferable method in dealing with the removal of a senile cataract. The manner of doing this operation in many details is individual in style.

Relevant to this matter, the author quotes the pertinent statement made by Doctor Zentmayer, his teacher and ophthalmic guide. Doctor Zentmayer states that "the utility of an operative procedure must be estimated, not by the technique and results of its most skillful interpreter, but by those likely to be attained by a surgeon of average ability." Wilder observes that the value of any cataract procedure is not proved by the visual acuity obtained, statistically recorded, but rather by how little reaction to the trauma results.

Having fixed upon the capsulotomy operation, and judging by his personal experience, the writer has no reason to delve into the mysteries of other methods, but is quite content to await a better procedure which will come as the numerous **heterodox** methods crystallize into an orthodox procedure.

PREPARATION OF PATIENT

This embraces a proper preparation of the field of operation: a well-chosen assistant, fully competent to control the lids; the needed assortment of instruments; and a coöperative mental attitude of the patient. The field is prepared in the usual manner, with the possible difference that the ciliary borders of the lids are not scrubbed, simply gently wiped. Wilder's suggestion is valuable. Remove the cilia with scissors, leaving the central ones to be used as a handle, for, as he points out, the operator's attention should be centered precisely upon the corneal section, and in doing so it is quite possible that the point of the knife, unobserved, is likely to come in contact with a few stray cilia at the extremities of the lids. The

possible infection from the lid borders, or the danger of interference by the cilia, the writer largely guards against by the use of solid and rather broad lid retractors, they being retained in position by a competent assistant until completion of the entire operation, thus avoiding all unnecessary manipulation of the lids. Particular attention should be directed to the lacrimal sac. Culture and examine the conjunctival secretions, and when indications seem to warrant it examine the conjunctival scrapings. Examination of the comparative ratio between the systolic and diastolic blood pressure, with especial attention to the latter, is of vital importance. As a preliminary step, but of no less importance, is the cultivation in the patient of a proper mental attitude, so necessary for complete coöperation. This is encouraged by a full confidence between surgeon and patient. Do not request too much of the patient, but rather encourage him to assume a passive frame of mind. One under the stress of a cataract operation should not be burdened with too many admonitions, or his equilibrium is liable to be so disturbed that he will be unable to properly coöperate. During the operation there should be absolute silence. Not only is it unbecoming for the surgeon to assume a bombastic, domineering demeanor, but it is fatal to the best interests of his patient. How purposeful are the words of Ammar of Mosul, that Egyptian eye surgeon who originated suction in soft cataract, now known as Daviel's extraction. He was very solicitous for the welfare of his patient, shuddered with desperation if the operation did not progress favorably. He recommends "to proceed with caution and circumspection, addressing kind words to his patient when the cataract needle enters the eye." He makes great demands upon the eye surgeon—that he should be provided with sharp senses, a sure hand, and greatest experience.

ANESTHESIA

Too much emphasis cannot be placed on the matter of thorough anesthesia. Not only surface anesthesia, but complete lid anesthesia is essential. Van Lint's method of injecting a 2 per cent novocain solution along the lower orbital rim, in the neighborhood of the external canthus and over the site of the lacrimal sac, is ideal. The greatest single advance in cataract surgery is undoubtedly due to proper lid control. Satisfactory lid anesthesia, together with full confidence between patient and surgeon, represents 90 per cent of success.

OPERATIVE PROCEDURES

It is the writer's practice to do a preliminary iridectomy. It guards against the iris falling in front of the knife when later making the corneal section. It facilitates the capsulotomy. It overcomes the need for the patient to look downward at the time of lens expression. It is a possible aid in maturing not fully ripe lenses. In some it may temporarily improve vision. It is a safe-

* Read before the Eye, Ear, Nose, and Throat Section of the California Medical Association at the fifty-eighth annual session, May 6-9, 1929.

guard against glaucoma. It avoids extra trauma at the time of lens expression, thus obviating a disturbing bleeding which would seriously inconvenience further manipulations. The most important feature, however, is the fact that the patient receives an education as to the required conduct necessary for successful coöperation. In turn the surgeon learns the temperamental peculiarities of his patient, and how his tissues react to the insult inflicted. In a discussion with one of our country's most distinguished eye surgeons on this matter of preliminary iridectomy that surgeon stated that while he used, upon occasions, some of the newer methods, yet if his eye was to be operated upon for cataract, he certainly would desire a preliminary iridectomy, followed later by capsulotomy and expression.

An interval of three or four weeks is allowed to elapse before making the corneal section. A well-made, clean incision, properly placed, lends much to success. Unmindfulness of this feature may precipitate serious consequences. The incision must be of such length as to permit the lens to escape readily, without stripping the cortical material from the nucleus or breaking of the lens. Leaving an undue amount of cortical substance within the eye has a distinct disadvantage, subjecting the eye later to possible serious positive lens reaction.

The incision must be so placed as to give the required length without invading important uveal structures, and also avoid the possibility of later gaping of the wound. While the use of sutures is advocated by some, it has many inconvenient features. The placing of the incision in that portion of the cornea which is best nourished aids much in the future healing process. Primary healing of the wound is essential. An incision placed entirely in the sclerocorneal limbus, occupying about two-fifths of the circumference of the cornea, will meet more nearly the needs; if placed wholly in the cornea, a much larger incision will be necessary, thus courting the dangers from a gaping wound. A small conjunctival flap is desirable in that it heals more promptly and thus seals the wound. If a small hemorrhage is encountered, it can be controlled by the use of epinephrin.

After the corneal puncture is made, the blade of the knife is pressed forward, making the counter puncture and without hesitation cutting up in the line of the limbus deftly and promptly. Immediately before completing the section, less aggressive action is essential. The entire procedure requires the nerve of a lion and the tactile delicacy of a lady's hand. The writer is accustomed to use a knife, the belly of which is two and one-half millimeters in width, and straight up, to within four millimeters of the point. Daviel, who in 1753 really was the inventor of the intracapsular method, devised this semicircular incision. Since that time it has undergone many modifications, only to return to its original form.

Couching, which showed a 40 per cent loss of eyes, was thus reduced to 10 per cent, and later Albrecht von Graefe's introduction of the capsulotomy method further reduced the loss to between 2 and 4 per cent.

In performing the capsulotomy, the method of incision is quite individual to the operator. Knapp suggests an incision paralleling the corneal section. Crucial incisions of A and V type are recommended. The writer's practice is an attempt to join two semicircular incisions. In recent years forceps have come into greater use than formerly in the removal of the central portion of the capsule. Certain distinct advantages are gained with this method in preventing the wound closing, and thus retaining some of the lens material. The disadvantage of the retention of an undue amount of lens material is obvious. In the use of forceps the danger of a sudden upward movement of the eye is to be guarded against. Fischer has devised a special forceps for this purpose.

In the removal of the lens, three anatomical features are presented: the capsule, the cortex, and the nucleus. Immediately we are confronted by one of two procedures, whether delivery of the entire lens in its capsule, "the intracapsular method," or the delivery of the lens, cortex and nucleus, leaving much of the capsular membrane, "the capsulotomy method." The writer elects the latter. For the purpose of lens expression, two spatulae of two millimeters in width are used, one curved on the flat at the outer half at about forty-five degrees. One guards the wound; and with the convex surface of the curved spatula, pressure toward the interior of the eye is applied, just inside the lower limbus, opposite the lower lens border. The pressure should be firm, steady and definite at first, cautiously and gradually increasing in force. This causes the wound to gape and the lens to start. Such directed and controlled pressure is continued until just before the greatest thickness of the lens is about to be engaged in the wound. At this time it is well to pause a moment to allow the tissues to accommodate themselves to the decreasing tension. The succeeding pressure is to be directed upward toward the wound, bringing along with the spatula the nucleus and as much of the soft cortex as possible. The first pressure tilts and displaces the lens, causing the edge to present. The second pressure forces the lens out of the eyeball. To accomplish this phase of a cataract operation requires a trained eye and a hand capable of exerting with delicate precision just the right pressure to achieve the desired results. As the lens is delivering, the pressure is lessened, but the same level is maintained and the spatula turned slightly, so that the convexity will receive the lens nucleus and as much of the cortex as may come away. Remaining soft cortex or lens débris may be removed by repeating the corneal pressure two or three times. Many operators accomplish this by irrigating the anterior chamber. It is the writer's habit to "get in and get out" with the least amount

of manipulation. At no time is the patient commanded or unduly urged to change the position of his eye from the primary position. This more or less passive position is much in accord with the passive attitude of the patient. Should there be, after delivery of the lens, undue gaping of the wound, or the presentation of uveal tissue, or perchance vitreous, further manipulation is immediately stopped and the lids allowed to gently close. After a rest of several minutes the field of operation is again exposed and the toilet of the eye completed.

Prompt and uncomplicated recovery is greatly facilitated by a well-conducted toilet. The completeness with which these measures may be carried out depends greatly upon the conduct of the patient. In the tractable, this program can be conducted successfully, but in the utterly intractable patient it is far safer to attempt only the most imperative measures. Removal of any remaining cortical material, if not successfully accomplished by stroking the cornea, may be attempted by irrigation. Probably the safest apparatus is an all-glass syringe with a small metal pipe such as a dentist uses in irrigating a dental canal. The tip should be placed at the lips of the wound, certainly not beyond the inner edge. Occasionally a spatula or a Daviel spoon is of service. Reposition of the iris, freeing the angles and smoothing out the pillars of the coloboma are best done by the spatula. The incision is to be cleansed, freeing it from all debris, and with forceps gently removing any shreds of clotted blood. Careful coaptation of the lips of the incision and placing in position the narrow conjunctival flap completes the procedure.

Both eyes are covered with a light dressing and a pad of four or five thicknesses of gauze, with four tapes, two longer so that they may be tied in the neighborhood of the ear, the whole being held in position by two strips of adhesive. No heavy or cumbersome masks or dressings are used. In perfectly smooth cases the eye is not inspected or the dressing changed for four days.

RESULTS

In selected cases of cataract 85 to 90 per cent of the operations will yield first-class results. In unselected cases, probably 15 to 20 per cent will show indifferent results or loss; about 5 per cent are failures. Many of the difficulties are due to intractable patients, diseased conditions, inadequate lid control, poor instrumentation, particularly improper knives, and lenses with large nuclei and small sections.

After-cataract is a complication present in probably 75 per cent of cases. Knapp, together with others, advocates early discission. The writer feels more confident to wait six weeks to two months. By either the Knapp or Ziegler method, or the small de Wecker scissors, he has always found it a difficult procedure to produce a good opening in the capsule. However, since Wheeler has given us his method of dealing with

after-cataract, the question has been simplified to almost 100 per cent ideal.

OPERATIVE PROCEDURES COMPARED

In 1911 the Chicago Ophthalmic Society presented a very exhaustive symposium on the expression of senile cataract. This symposium was taken part in by nineteen distinguished ophthalmic surgeons. All phases of the subject were discussed, based on the best information obtainable up to that time. It was a time, many will remember, when intracapsular methods were being actively discussed. One hundred and sixty replies to a questionnaire received from ophthalmic surgeons throughout this country relative to the comparative merits of the capsulotomy and intracapsular methods were analyzed. It is somewhat interesting to observe that (knowing the personnel, to a large extent, of the list that replied to the questionnaire) one can associate the intracapsular operation with those of a more venturesome turn of mind. Of the one hundred and sixty replies, only 30.6 per cent had performed the intracapsular operation, 34.6 per cent of this number considered the intracapsular method inferior. Some of the objections offered were: greater difficulty in performing the operation, loss of vitreous, lack of safety for the operator of average ability, and a greater percentage of poor cosmetic results. Of the percentage that had performed the operation, 22.4 per cent reported poorer vision. Those doing the capsulotomy method reported from 40 to 80 per cent of their cases required a discission. Eight noted iritis, one glaucoma, and four reported infection. Since that time much experience has been accumulated. The writer selected eight of the outstanding surgeons who answered the questionnaire and to these he addressed communications calling attention to their answers in 1911, and requested their further opinion based upon subsequent developments. Their replies were as follows:

Jackson, Edward.—His opinion has not changed. The intracapsular methods have failed to do what was hoped from them. For his own eyes he would not submit to the intracapsular method.

Zentmayer, William.—Capsulotomy method safer. Looks with favor on the Knapp's intracapsular method, but does not do any of the intracapsular operations.

Würdemann, Henry.—Does about 60 per cent of his cases by the intracapsular method. About five hundred cases since 1908.

Fisher, William.—Has changed his intracapsular methods of operation. Does not do the Smith operation any more. Does a modified Barraquer method. States if surgeons would be fair and noted amount of postoperative inflammation and poor vision due to retained capsule, they would not stress the complications which sometimes follow the intracapsular methods.

Wilder, William.—Does an intracapsular operation similar to the Knapp method. If it were his

own eyes he would prefer a preliminary iridectomy, followed by a capsulotomy and expression.

Green, John.—Believes the capsulotomy method a better and safer procedure for eye surgeons of average ability than any intracapsular method so far devised.

De Schweinitz, George.—Believes cystotome should be abandoned. Uses capsular forceps. Believes Knapp's method the best intracapsular method, if advising an intracapsular operation. Personal experience too limited.

Gradle, Harry S.—Has abandoned intracapsular methods owing to slow closure of wounds, ruptured capsule, drawn pupils, poor cosmetic results. Regards combined capsulotomy method only safe procedure.

SUMMARY

The above procedures reflect much of the writer's views regarding the cataract problem. It is to be remembered, however, that expedience and community conditions govern or modify many accepted principles of eye surgery. It is almost axiomatic in eye surgery that subsequent complications are minimized by the fewer steps to an operation and the least amount of trauma inflicted.

It may be, perchance, that dealing with certain types of cataract, or with certain classes of patients, such as Colonel Smith came in contact with, or clinic patients in large cities of this country, the intracapsular operation may fulfill the needs of a limited number. However, in the practice of the ophthalmic surgeon of average ability, or in the average community, it seems to the writer very ill advised to undertake such a procedure.

Goodrich Building.

DISCUSSION

LLOYD MILLS, M. D. (609 South Grand Avenue, Los Angeles).—Patients have the right to expect that every measure which safeguards them from complications during and after cataract extractions will be used provided the risks of operation are not increased thereby. Certain cases clearly are capable of almost ideal operative measures such as the various forms of extraction within the capsule may be in skilled hands. Other cases manifestly demand combined extraction.

Men who do ten or twelve cataracts a year never acquire the skill or judgment necessary to separate these cases. It is generally recognized that the safest procedure for these occasional operators is the combined extraction done with blocking of the facial nerve. It is not clear how many surgeons still can persist in leaving their cataract wounds open to infection and to all the complications which delayed healing and unusual strain can cause during convalescence. Nowhere else in the body do surgeons have the temerity to leave the wounds of vital areas open to any and every possible mischance. To prevent this the use of the full conjunctival flap and its complete suture have been introduced and are unqualifiedly urged by those who have had sufficient experience with both methods to know the protective value of the full suture. By its means secondary infection and secondary glaucoma almost have been eliminated and practically all other complications save those arising from the retention of lens material have been reduced almost to the vanishing point. Most of the younger

eye surgeons throughout the world are adopting this measure, which is applicable to nearly all forms of adult cataract operation.

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DOHRMANN K. PISCHEL, M. D. (490 Post Street, San Francisco).—In discussing the advantages of the capsulotomy method of lens expression we must certainly emphasize the important advances of the past decade or two, which have so vastly improved the end results. Therefore I was surprised that the author dismissed the subject of capsule forceps with a few sentences. The importance of this subject is brought out in one of the replies to his questionnaire which the author quotes as follows: "De Schweinitz believes cystotome should be abandoned. Uses capsule forceps."

The advantages of the capsule forceps can hardly be overestimated, and should certainly be stressed. The removal of a large central piece of the anterior capsule accomplishes several things. It removes that portion of the capsule just in front of the pupil which furthermore might be opaque and thus interfere with good vision. By substituting a lacerated wound in the capsule for an incised one, it does not allow the capsule to rapidly close again and thus seal off the retained cortex which will form a dense secondary cataract. Naturally, with a proper hole in the anterior capsule, it never closes in the pupillary area. Thus the aqueous has free access to any retained lens cortex there and quickly absorbs it. The result is the appearance of a black pupil in a surprisingly short time, even when a large amount of cortex has been left behind. The contrary was true when a linear incision was made with the cystotome, for the capsule wound was quickly sealed and no absorption of cortex could take place.

I do not believe that there are any valid objections to the use of the capsule forceps. As they can be withdrawn very easily and quickly, the danger of a sudden upward movement of the eye is less when they are employed than when the cystotome is used. The possibility of luxating the lens into the vitreous cavity by too great pressure on it when attempting to grasp the anterior capsule is so remote when done properly that it can be entirely disregarded.

The high incidence of secondary cataract after capsulotomy operations of the older type (so heavily stressed by the intracapsular advocates) has always been considered the chief disadvantage of this operation. Its prevention has been eagerly sought by many means. Here we have the crux of the whole situation. With the capsule forcep technique the complication of secondary cataract is practically removed, and with it such unnecessarily high incidence of operations for after-cataracts as 75 per cent will disappear. Twenty to 25 per cent will then be much nearer the correct figure.

In closing, I might also mention the use of Hess' spoons in the delivery of retained cortex. This instrument was designed by that master operator, the late Professor Hess of Munich. These broad spoons enable one to massage out considerable material and thus hasten convalescence.

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DOCTOR HARBRIDGE (Closing).—The writer wishes to express his appreciation to the colleagues who have discussed his paper. He wishes especially to thank Doctor Pischel for the emphasis he has placed upon the importance of doing a proper capsulotomy. The use of capsule forceps perhaps should be the procedure of election. The author described the technique he has been accustomed to use and therefore described the method which had for its object the same end as suggested by Doctor Pischel, namely, the obliteration of the central portion of the anterior capsule, thus allowing more complete absorption of any remaining cortex.

BLADDER CARE AFTER ABDOMINAL OPERATIONS*

By ROBERT GLENN CRAIG, M. D.
San Francisco

DISCUSSION by Homer C. Seaver, M. D., Los Angeles;
H. K. Bonn, M. D., Los Angeles; William Henry Gilbert,
M. D., Los Angeles; H. N. Shaw, M. D., Los Angeles.

THE technique of surgical operations is now becoming so well standardized that further improvement along this line will probably be slow. As this is becoming better recognized, more attention is being directed to the preoperative and postoperative care to lessen the postoperative morbidity and to make more pleasant the postoperative convalescence. One source of anxiety to the surgeon, and more especially to the gynecologist, is the care of the bladder immediately after operation. As evidence of this anxiety we have only to recollect the frequency with which the question, "Has the patient voided?" is asked during the first twenty-four to forty-eight hours after operation, and the sigh of relief, audible or inaudible, when the answer is in the affirmative. In gynecology, where the operations are carried out in close proximity to the bladder, or which may involve that organ, distention of the bladder is more apt to cause a disturbance in the postoperative anatomical relations which may lead to serious postoperative complications. For this reason, the gynecologist has not felt justified in allowing the bladder to become overdistended before catheterization, as can be done with safety after operations within the upper abdomen, thus increasing his anxiety.

While it has been stated that it is difficult to infect a normal bladder by the use of a catheter, it is undoubtedly true that any procedure which will lessen the incidence of postoperative catheterization will also lessen the incidence of postoperative cystitis.

PROCEDURES PROMOTING NONRETENTION

Numerous procedures have been and are being advocated which will cause the patient to void after a postoperative retention with distention has occurred. These may be grouped under three headings:

1. Intravesical instillations.
2. Internal medication, either oral, subcutaneous, or intravenous.
3. Psychic stimuli.

None of these recommendations are directed primarily to the prevention of catheterization,

thus causing the patient to void spontaneously before the bladder becomes distended. This report is concerned with the prevention of a distention rather than with the correction of a retention.

CATHETERIZATION AND POSTOPERATIVE CYSTITIS

The results to be reported were first called to our attention during a study of postoperative cystitis begun in Baltimore in 1925. At that time it was felt that catheterization was of major etiologic importance in postoperative cystitis and that an instillation given at the time of catheterization would probably lessen the incidence of infection. The commoner solutions, such as silver nitrate, argyrol, and mercurochrome, were used. We were pleasantly surprised to find that the necessity for catheterization after mercurochrome was much less than after any other solution used. The results after the use of mercurochrome to prevent postoperative catheterization are given in this paper. In order that a patient may have sufficient fluid in the bladder to void after an operation, it is necessary that the fluid intake within twenty-four hours after operation be sufficiently great. We now take measures to increase this intake by allowing the patient fluids before operation and by giving him fluids immediately after operation.

CLASSIFICATION OF RESULTS

The results which are to be reported have been divided into four groups:

1. Control group, in which nothing was done—ninety-nine patients.
2. Group two, in which one ounce of one per cent mercurochrome was instilled into the bladder at the time of operation—seventy-eight patients.
3. Group three, in which one ounce of one-half per cent mercurochrome was instilled into the bladder at the time of operation—ninety-three patients.
4. Group four, in which one ounce of one-half per cent mercurochrome was instilled into the bladder at the time of operation plus one liter of fluid per rectum—thirty-nine patients.

All the patients reported in these groups had laparotomies in which some pelvic operation had been done.

COMMENT ON GROUPS

1. *Control Group.*—Ninety-nine patients were observed in the first control group in which nothing was done to prevent catheterization. These patients alternated with those who received an instillation. It is necessary to be familiar with the routine followed on the gynecological service of the Johns Hopkins Hospital at the time these patients were observed. During this period all patients who did not void at least 100 cubic centimeters of urine at one time within eight hours after they were returned to the ward, were catheterized. They were further catheterized every eight hours if they did not void 100 cubic centimeters at one time within a similar period. In other words, at no time immediately after operation, was the bladder allowed to be distended with

* From the Department of Gynecology, Johns Hopkins University and Hospital, Baltimore, Md.

I would like to take this opportunity to thank Dr. Thomas S. Cullen, Professor of Gynecology, for the privilege of undertaking this study on his service. I am also indebted to members of the resident house staff and to Miss Ruth Doran for their valuable assistance.

* Read before the Obstetrics and Gynecology Section of the California Medical Association at the fifty-eighth annual session, May 6-9, 1929.

urine. As sutures are often placed near and the dissection is carried close to the bladder in gynecological operations, this is considered a wise precaution.

2. *Group Two Received One Per Cent Mercurochrome as a Bladder Instillation.*—In the second group of seventy-eight patients who received one ounce of one per cent aqueous solution of mercurochrome immediately after operation, it was found necessary to catheterize eighteen patients, or 23 per cent. The same routine was observed as in the control group. Some of these patients, after the instillation of one per cent mercurochrome complained of bladder irritation and a desire to void. These always obtained immediate relief from symptoms by a bladder irrigation of 50 per cent saturated boric acid solution, and usually continued to void spontaneously. Hemorrhage or blood in the urine in small amounts occurred in about two per cent of the patients observed. It was thought that this was due to the irritative effect of the mercurochrome on the bladder mucosa. For this reason one-half per cent mercurochrome was substituted for the one per cent mercurochrome. No blood has been found in the urine in any of these cases.

3. *Group Three Received One-Half Per Cent Mercurochrome as a Bladder Instillation.*—In the third group of ninety-three patients, mercurochrome (one-half per cent) was given as a bladder instillation and it was found necessary to catheterize only eight patients, or 8.6 per cent. It is necessary to state that the routine observed in the first two groups was not followed in this group. A slight change was made in that the initial time which was allowed to elapse before catheterization was changed from eight to twelve hours.

4. *Group Four Received One-Half Per Cent Mercurochrome and Additional Fluid by Rectum.* In the fourth group of thirty-nine patients who received one liter of two per cent soda bicarbonate solution containing sixty cubic centimeters of mineral oil, per rectum, in addition to a bladder instillation of one ounce of one-half per cent aqueous solution of mercurochrome, it was necessary to catheterize three, or 7.7 per cent. The same routine was observed as in the third group.

TABLE 1.—*Showing the Results Obtained by a Bladder Instillation of Mercurochrome*

Group	Patients Observed	Catheterizations No. Pts.	Necessary Per Cent
1. Control group	99	60	60
2. Bladder instillations of one per cent mercurochrome	78	18	23
3. Bladder instillation of one-half per cent mercurochrome	93	8	8.6
4. Bladder instillation of one-half per cent mercurochrome plus one liter of rectal fluid	39	3	7.7

The figures given above represent the number of patients in whom one or more catheterizations were necessary and does not represent the proportionate decrease in the actual number of

catheterizations, as patients catheterized once not infrequently had to be catheterized three to four times. It was further observed that an instillation of mercurochrome after a catheterization decreased the necessity for subsequent catheterizations.

TECHNIQUE

The technique in all of these cases consisted in the instillation into the bladder on the operating table immediately after operation, of one ounce of the mercurochrome solution. Since then, in many cases we have made the instillation at the time of catheterization at the beginning of the operation and have noticed no difference in the results.

The rectal instillation of fluid was given on the operating table while the patient was still under the anesthesia. If the flow was slow, it could be easily accelerated by a slight Trendelenberg position. It is absolutely necessary that the patient be kept under anesthesia while the fluid is being given. In less than one per cent of the patients treated was any of the fluid expelled.

COMMENT

No scientific explanation can be made as to why an instillation of mercurochrome should cause a patient to void spontaneously. It is assumed that with the dissection of the bladder causing trauma, with disturbance of its nerve supply, with the anesthetic, and with the lowered resistance at the time of operation, there is a loss of muscle tone in the bladder wall so that postoperative distention occurs quite easily. It is felt that the action of the mercurochrome is an irritative action directly on the bladder musculature and that this restores the muscular tone before there is sufficient fluid in the bladder to cause an overdistention. Further observation is necessary before this point can be determined with accuracy.

The advantages of decreasing the necessary number of postoperative catheterizations is obvious, and this must of necessity result in a decrease in the incidence of postoperative cystitis. Recently a number of articles have appeared in the literature which apparently minimize the danger of postoperative catheterization, some even stating that it is impossible to infect a normal bladder or kidney, even if pure cultures of pyogenic organisms are injected into the bladder. Such statements cannot be accepted until more conclusive experimental work has been done. Furthermore, we are here dealing with abnormal bladders, as is indicated by the difficulty in voiding. It is also obvious that by decreasing the number of postoperative catheterizations the postoperative comfort of the patient is increased and the nursing care is proportionately decreased.

Undue emphasis cannot be placed upon the importance of sufficient fluid intake on the day of operation. We now give fluids freely, including coffee and orange juice, on the morning of operation up to within one hour of the operation. I usually insist on the patient taking at least 500 cubic centimeters on the morning of operation.

I have not seen this cause vomiting with the anesthetic. About 1200 to 2000 cubic centimeters of fluid can be easily given per rectum immediately following the operation and this usually is a sufficient quantity for the day of operation, so there is no necessity to force fluids per mouth or to disturb the patient with repeated small rectal instillations.

SUMMARY

1. This series of cases demonstrates that a bladder instillation of mercurochrome decreases the necessity for postoperative catheterization, and *per se* decreases the probability of postoperative cystitis. It prevents the occurrence of bladder distention, rather than the correction of a retention.

2. Four groups of patients were studied:

(a) A control group of ninety-nine patients was observed in whom it was necessary to catheterize sixty, or approximately 60 per cent.

(b) In a group of seventy-eight patients who received one ounce of one per cent mercurochrome into the bladder at the time of operation, it was necessary to catheterize eighteen, or 23 per cent.

(c) In a third group of ninety-three patients who received one ounce of one per cent mercurochrome as a bladder instillation, it was necessary to catheterize eight, or 8.6 per cent.

(d) In a group of thirty-nine patients who received one liter of fluid per rectum in addition to the one-half per cent mercurochrome in the bladder, three, or 7.7 per cent, were catheterized.

3. Fluids per rectum, one to two liters given under anesthesia, further increase the number of patients who void spontaneously.

490 Post Street.

DISCUSSION

HOMER C. SEAVER, M. D. (1930 Wilshire Boulevard, Los Angeles).—This paper offers an increase in comfort to the woman who has been subjected to surgery. On our services at the Los Angeles General Hospital, Doctor Shaw and I have adopted Doctor Craig's technique. We have catheterized preoperatively because of the technical advantages in operating when the patient's bladder is empty. Immediately following catheterization, one ounce of one-half per cent mercurochrome is instilled in the bladder.

I am able to report on three hundred cases in the majority of which extensive intrapelvic surgery was done and in many instances a combination of laparotomy and plastic work. In the first one hundred it was necessary to catheterize postoperatively but three patients. In a second group of forty patients none had to be catheterized. Of the last one hundred and sixty patients forty-three were catheterized. The average number of times these patients had to be catheterized was slightly under three. Considering these as one group, as they rightly should be since they were consecutive cases, it was necessary to catheterize postoperatively forty-six out of three hundred patients, or 15.3 per cent, which is a higher incidence than occurred in Doctor Craig's third group, but certainly is more satisfactory than the control patients who did not receive the instillations. Of the three hundred patients there were eight, or 2.6 per cent, who developed a postoperative cystitis. The only other complication was a rather serious hematuria, which occurred on the second postoperative day in

two patients. This, however, disappeared spontaneously within a few days.

In view of the facts, I believe that Dr. Glenn Craig's technique should be adopted as a routine measure in all cases of pelvic surgery.

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H. K. BONN, M. D. (520 West Seventh Street, Los Angeles).—This article is most timely and of considerable practical importance. As stated in the paper, the report is concerned with the prevention of a distention of the bladder rather than with the correction of a retention. I have used the procedure since Doctor Shaw made a report of its use to the surgical section of the Los Angeles General Hospital and am firmly convinced of its value. Personally, I favor the use of one-half per cent mercurochrome solution for the bladder instillation and permit the patient a leeway of ten to twelve hours before catheterization is done, the majority voiding before ten hours have elapsed. But I do not regard eight hours as a retention.

Not so many years ago it was not an uncommon practice to catheterize patients who had had a perineorrhaphy or other plastic vaginal work done for a period of ten days, under the mistaken impression that only in this manner could a good result be achieved. A real danger was present in these cases of repeated catheterization, namely, that of acute pyelitis, and a pyelitis can appear rather quickly after catheterization. Such a pyelitis is still possible in this day, but the use of mercurochrome instillations almost negatives such an additional complication. Following the removal of hemorrhoids, it is not uncommon, as is well known, for the majority of patients to fail to void. Here the mercurochrome instillations are of very definite value, as I have proved to my own satisfaction.

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WILLIAM H. GILBERT, M. D. (305 Medico-Dental Building, Los Angeles).—Postoperative catheterization constitutes a menace to the patient and adds considerably to the postoperative discomfort. Anything that will lessen this is a most desirable procedure. I am not of the opinion that postoperative catheterization under proper precautions causes cystitis. It does, however, add to the liability of that complication. Without doubt overdistention of the bladder is the greatest menace we have to contend with, and I believe that the bladder should not go unemptied longer than eight hours. It has been my custom for a number of years to administer, preoperatively, large quantities of water and orange juice. This, coupled with plenty of water by rectum after operation, yields excellent results and causes the patient to have very little annoyance in the postoperative use of the catheter.

I am satisfied that the method as laid down by Dr. Glenn Craig is very valuable and should become a postoperative procedure with all of us. It will unquestionably lessen the frequency of catheterization and the prevalence of postoperative bladder infections.

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H. N. SHAW, M. D. (901 Pacific Mutual Building, Los Angeles).—Two years ago I visited the Johns Hopkins Hospital and saw Dr. Glenn Craig's work there. I was greatly impressed with its value and Doctor Seaver and I adopted the method, both on our General Hospital service and in private practice. In the first eighty-two cases we had no catheterizations, with only three in the first hundred. Two of these were extensive cystocele operations, which usually have to be catheterized for days, and in these cases the period of catheterization was considerably lessened. Unfortunately they copied our instructions wrongly in the book of operating-room directions at one of the hospitals, and our patients were given two per cent instead of one per cent solution. Two of the patients had severe symptoms, one with alarming hematuria and another with considerable amounts of pus and blood in the urine. These symptoms cleared up very quickly. During the past eighteen months we have used one-half per cent instead of one per

cent solution, and while not quite so effective as the stronger solution, we have had no cases of hematuria.

From our experience in over one hundred patients, we are convinced that the instillation of one-half per cent mercurochrome into the bladder before or at the end of operation, will practically eliminate postoperative catheterization.

Every surgeon knows that inability to void after operation is a cause of great discomfort to the patient, and that the catheterization may cause a troublesome urinary infection. Cabot has found that a bladder which has been overdistended will be infected by a catheter, regardless of aseptic precautions, while it is almost impossible to infect a partially filled bladder. For this reason he recommended catheterization within a few hours of operation, repeated at comparatively short intervals, to prevent overdistention and the inevitable infection. The less disturbance of the patient after a serious operation the better, and any procedure which can eliminate catheterization is bound to be valuable.

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DOCTOR CRAIG (Closing).—It is gratifying to know that the procedure recommended in this paper has proved satisfactory in the hands of others. Doctor Shaw had told me of his good results and I am indebted to him for his suggestion that I present this paper.

I am in complete accord with Doctor Bonn's statement that an acute pyelitis can appear very quickly after a bladder catheterization and infection, consequently to prevent it is of major importance. There still seems to be a diversity of opinion as to the potential dangers of bladder infection, following catheterization under aseptic conditions. Doctor Shaw has called attention to Cabot's work with distended bladders, and I feel there still is an ever present danger of infection when such bladders are catheterized. Any method which will prevent an overdistention will lessen the probability of infection even when a catheterization is necessary.

While the instillation of mercurochrome is a simple thing to do, it does definitely decrease the necessity for postoperative catheterization and lessens the danger of cystitis and pyelitis. This is of major importance.

UROLOGY—SOME GENERAL OBSERVATIONS*

By WILBUR B. PARKER, M. D.
Los Angeles

UROLOGY, a branch of the art and science of medicine, may be said to be a number of specialties within a specialty. It presents a field so broad in its lines of development that, as a collective group, no man can hope to attain perfection. Urology will always offer opportunities for advancement. The rapid strides in scientific procedure have erased forever the stigma that our specialty was once the favorite choice of the charlatan. In our own country, urology owes an everlasting debt of gratitude to the pioneers in our specialty, several of whom honor us today with their presence, and who in the trying days of the past had the courage to train and announce themselves as specialists in urology. The honest and efficient labors of these colleagues had much to do with giving urology the place it occupies among present-day specialties in medicine. Today the standards laid down by these men make

possible entrance into the specialty only after studious application and practice.

SOME FUNDAMENTAL NEEDS

I cannot conceive, in the field of medicine, a man more deserving of emulation than the honest, properly trained urologist. The lack of this qualification of honesty mars the records of a few men of recognized ability who are seemingly motivated by a desire for pecuniary gain and who use bizarre methods of technique designed for self-aggrandizement. Such urologists cast the only remaining reflection upon our specialty as it exists today.

We may well consign to the rank of charlatan any man practicing urology who is dishonest, and by contrast point with pride to the man of even most mediocre ability whose training and sincerity cannot be questioned.

It is regrettable to note that some contributors to recent urological literature fail to give rightful recognition to former writers through mention of proper references. In many journals, during the past year, apparently original articles on subjects especially referable to diagnosis and methods of technique have appeared which were fully covered and adopted years before by men much more able than many of the latter day writers. Those who are guilty show either an inexcusable lack of review of past literature or willful plagiarism.

Certain other contributors, who seem to have psychologic as well as urologic training, by omission to tabulate untoward results and through incomplete quotations of the opinions of other men, have helped bring about with some of our colleagues the adoption of methods wholly inadequate and obnoxious. These unfortunate practices will naturally eliminate themselves and in the end act to the disadvantage of those who thus offend.

It is a well-known truism that some day every successful man must stand upon his own feet. Nevertheless, we still observe some of the younger men who have forgotten the time-honored proverb that "No school ever made a man, but many a man has made a school." The failure to remember this proverb, especially when such lack is combined with avidity at the beginning of the practice of this chosen specialty, has brought upon a few of the graduates of our greatest clinics the accusation of at least being erratic, a reflection unjust to their able preceptors.

EXPLOITATION OF THE PROFESSION

The entire medical profession has continued throughout the year to be unmercifully exploited by manufacturers of various modalities and specifics, and no immediate relief for this exploitation can be seen. Therefore it behooves the members of this urological section to be especially discerning in the choice of means for the prevention and treatment of venereal diseases. The Council on Pharmacy and Chemistry of the American Medical Association is to be highly commended for past endeavors and deserves ex-

* Chairman's address, Urology Section, California Medical Association, at the fifty-eighth annual session, May 6-9, 1929.

tended means for more thorough investigation in its work of passing on new preparations.

Insurance companies of all types tenaciously hold to their viewpoint that medical men should furnish them complete reports of patients formerly under their care. They extend their so-called coöperation by obtaining a legal consent for such information from their prospects, but make no provision for remuneration of the physician. When we consider that the index of health, interpreted by many insurance companies, depends in good part upon a family history and urinalysis, it is little wonder that medical men resent this almost impertinent practice. This procedure has had no small part in nurturing the establishment of innumerable urinalysis bureaus, commercial to the nth degree.

Let us cite an instance of one of these momentous opinions, rendered by a urinalysis bureau to a patient in whom the urine was normal, except for the presence of a few leukocytes and an excess of indican. Said the director of the bureau in question:

"As I go over your reports, I see indican continues unchanged. This indican is only one of the many intestinal poisons that are absorbed from the intestinal tract. Such poisons sooner or later break down the defensive forces of the liver and enter the blood stream. When these poisons reach a sufficient degree of concentration we experience an acute illness. This illness is commonly called a bilious attack. If the poisons are not in quantity sufficient to cause an acute illness, degenerative conditions of the blood vessels and kidneys may occur which result in high blood pressure. There is a mass of accumulating evidence to show that these intestinal poisons predispose to or possibly cause cancer.

"With these thoughts in mind, I hope you will more seriously consider the kind and character of food you eat and the amount of exercise you take."

The patient's reaction on receiving the above was: "Am I condemned or is this gentleman misleading me?"

This patient seven years previously had been salvaged by us from a threatened renovascular degeneration, due to filiform urethral strictures, prostatitis, and vesiculitis. At that time he was experiencing difficulty in holding a twenty dollar a week position. Today, at the point of best possible efficiency, he is national sales manager for a large manufacturing company.

Such bureaus, which exploit the "five elements of positive health—inheritance, nutrition, sun exposure, body posture, and symmetrical muscular power—that contribute to the development of a sixth personality," are referred to in the exemplary article of Lovell Langstroth, San Francisco, published in the September 1928 issue of CALIFORNIA AND WESTERN MEDICINE.

OTHER ELEMENTS

The shopping patient, a constant annoyance to the members of our specialty, should be vigorously discouraged, even to the point of nonacceptance of his case. The efforts of the shopping patient, when added to the unwise or, if you choose, unethical references of physicians to former consultants, have resulted in irreconcil-

able breaches between men who were formerly at least tolerant of one another.

The attendance of members at our sectional meetings has been governed by the willingness of contributors to produce articles of real value. The percentage of absences may be due perhaps to the fact that possibly a number of our members are suffering from one of two ailments, known as superiority and inferiority complexes.

A fee schedule capable of proper interpretation between contracting parties has as yet not been presented. This is not to be wondered at, for surgical service is not merchandise. We must admit that the laity have important rights as to the amount to be paid for services rendered. The subject is worthy of close study.

Our comments on these matters should not brand us as overpessimistic for, as a matter of fact, we all know that each year brings forth an increased fraternalism and a realization of our great responsibilities toward preventive medicine.

1107 Brack Shops Building.

LONG WAVE X-RAYS IN DERMATOLOGY*

By LAURENCE R. TAUSSIG, M.D.
San Francisco

DISCUSSION by George D. Culver, M.D., San Francisco; William E. Costelow, M.D., Los Angeles; Moses Scholtz, M.D., Los Angeles.

IN 1925 Bucky,¹ amplifying the work done by Schultz and others in Germany and by Stern in this country, published the first report of his work with oversoft x-rays. These rays have a wave length of from 1.5 to 2.0 Angstrom units, and he stated that they differed biologically and physically from x-rays. He designated them grenz rays to convey the impression that they lie between the ultra-violet band and the true x-ray band in the spectrum.

APPARATUS USED

The apparatus used in the production of grenz rays consists of a special interrupterless transformer, designed to supply a maximum of twelve kilovolts. The principle of this transformer does not differ materially from that of the usual type by which the modern x-ray tube is activated. The tube used is similar in principle to the Coolidge tube, but differs in having a window of Lindeman glass through which the rays pass. This is necessary because the very soft rays would be absorbed to a large extent by ordinary silicate glass. Lindeman glass is a lithium borate glass. These tubes are water-cooled, and, on account of the friability of the Lindeman glass window, are usually protected by a metal sheath. There are two tubes available, the Müller tube and the Siemens tube. The first has an anode of the hollow cone type and the rays are projected from the end of the tube, while the second has an anode similar

* From the Department of Dermatology, University of California Medical School, San Francisco.

* Read before the Dermatology and Syphilology Section of the California Medical Association at the fifty-eighth annual session, May 6-9, 1929.

in design to that of the conventional x-ray tube with the window at the side. An erythema appears in twenty-four hours if a three-minute exposure is given, using 8 kilovolts, 8 milliamperes, at 6 centimeter target skin distance. This amount of radiation is considered empirically as one unit, and doses of from one to two units are given as a rule and repeated at two to four-week intervals for a few doses. In the course of a few weeks the erythema is replaced by a varying grade of pigmentation, which remains for some months.

BUCKY'S EVALUATIONS

As a result of his laboratory researches Bucky reported that the half absorption value of grenz rays was about 0.46 millimeters in water and that 2 millimeters absorbed over 90 per cent of the rays. Assuming the thickness of the skin to be about 1.5 millimeters, he concluded that only very inconsiderable amounts of radiation could reach the papillary and subpapillary layers. He stated that these rays were devoid of danger even when used to the extent of a very severe reaction on account of the fact that complete destruction of the basal layer of the epidermis could not occur. He is quite insistent, however, that tensions of ten kilovolts should not be exceeded, having seen unpleasant after-effects following the use of higher voltages. Bucky² also found that with small localized exposures to grenz rays a considerable general effect occurred. The most striking feature was a rapid and marked drop in the white cell count which as rapidly returned to normal. He explained this as being due to the effect of the rays on the autonomic nervous system. The erythema caused by these soft rays develops sooner than is the case with the ordinarily used x-rays. From these and other observations Bucky concluded that he was dealing with a ray physically and biologically different from the x-ray and designated it the grenz ray to indicate that it lay on the border line below x-rays.

OTHER VIEWPOINTS

Most of the subsequent investigators object to considering these rays as other than unusually long wave x-rays, maintaining that the biological and physical features were quite similar. E. Uhlmann³ and others were able to show actual tissue destruction in animals given relatively large doses of the soft rays. He concluded that these rays are not devoid of danger if used in extreme dosage. Martenstein and Granzow-Irrgang⁴ found that intensities of approximately one-third of the effective skin dose penetrated to the depth of the subpapillary layer of the skin. Eller⁵ objects to the term "grenz rays" and substitutes for it that of "supersoft roentgen rays (2 Å)" as being more nearly descriptive of the true nature of the rays. He produced radiographs of metal objects on dental films, with filters as thick as one millimeter of aluminum. He used exposures approximating those used in producing an erythema on human skin. His results were confirmed by Dr. Charles Lerner of New York. Hirsch, quoted by Eller, published a table in which he shows that

the shortest wave length produced by a peak voltage of ten kilovolts is 1.24 Å. Gabriel⁶ showed that the same drop in the white cell count occurred with short-wave rays as with the grenz rays, the only difference being that it was somewhat slower in developing and took longer to return to normal. Attempts to standardize dosage on the basis of physical measurements have been unsatisfactory so far.

A wide divergence of opinion concerning the usefulness of this wave length is found in the literature. Bucky is by far the most enthusiastic advocate, having reported good results in a large number of dermatologic and general medical conditions, and in addition maintained that the method is absolutely devoid of danger of late sequelae, so much feared in x-ray therapy. Though a number of writers have detailed their reasons for believing that there is a possibility of producing late unfavorable sequelae, none of them have reported experiencing any of these late results. At the 1927 meeting of the Deutschen Dermatologischen Gesellschaft, a number of members who had had experience with this method of treatment expressed their opinions as to its field of usefulness. Artzt and Fuhs⁷ reported good results in the treatment of tuberculosis verrucosa, erythema induratum, hidrosadenitis axillaris, lichen chronicus of Vidal, mycosis fungoides and basal cell carcinoma. Schreus⁸ reported no bad effects up to that time other than a pigmentation, which lasted a considerable time. Uhlmann⁹ found this method striking in the treatment of psoriasis, including that of the scalp, but concluded that these soft rays were not superior to the x-ray in eczema and neurodermite, inferior in the treatment of tinea, and stressed the fact that they were not to be considered as entirely harmless. Rottmann¹⁰ found changes in the blood vessels which convinced him that there was a possibility of late ill effects. Gabriel¹¹ reported finding changes in the deep layers of the skin of animals and humans. Scholtz¹² considered the rays similar in action to x-rays and thought that ill effects were unlikely with careful dosage. He considered that the practical use was limited on account of the danger of breaking the Lindeman glass window and by the small field that could be treated at one time. Werther¹³ stated that by overdosage it was possible to produce epilation and long-standing hyperesthesia, but reported good results in pruritus and hyperkeratosis of the senile type. He had not observed a single case of cancer which had been cured. He felt that the method was impractical for eczema and psoriasis. Bucky¹⁴ reported that he had treated some three hundred cases, some as long as four years previously, and stressed his good results in the treatment of epithelioma. In another article Bucky² reported that "many skin diseases react wonderfully to this treatment, such as eczema of all kinds, acne rosacea, lichen planus, pruritus ani; psoriasis came back after a short time." He had equally good results with lupus, tinea, sycosis, warts, mycosis fungoides, Kaposi's disease, and epitheliomata. Eller⁵ reported good results in dermatophytosis, Duhring's disease,

basal cell epitheliomata, lichen planus hypertrophicus, perlèche, tinea capitis, small early keloids and syccosis barbae. He stresses the usefulness of the grenz rays in the treatment of epitheliomas of the lids, having found no damage to the eyeball, with large doses in spite of the fact that no special precautions were taken. In an experience of over two years he has seen no sequelae similar to those produced by erythema doses of shorter wave x-rays, but warns against overdosage. The only case showing these late sequelae was one presented at the New York Dermatological Society by MacKee¹⁵ in 1928. Areas of slight telangiectasia and depigmentation had developed in areas treated six months previously with mild doses of grenz ray. The patient was an inveterate psoriatic who had received much therapy, including x-ray, ultra-violet light, and arsenic. The areas exposed to the soft radiation, however, had presumably not been previously treated with x-ray. It is reasonable to believe that this patient's skin had become unusually susceptible to external influences from previous therapy. Several writers warn that the effects of the soft radiation are accentuated when applied to areas previously treated with roentgen rays.

PERSONAL OBSERVATIONS

In the past nine months I have used the ultra-soft x-rays on a variety of dermatological conditions. The number of patients treated was intentionally small because it was felt that conservatism was the safest policy in dealing with a wave length, the very late results of which might possibly be unpleasant. By experiment it was found that, using a Siemens tube activated by a special Wappler transformer, four minutes exposure with 8 kilovolts, 8 milliamperes, at 8 centimeter target skin distance produced an erythema on the flexor surface of the forearm which appeared within twenty-four hours. The area became pigmented in the course of a few weeks and this pigmentation persisted for months. This dose was considered as one unit, and nonmalignant conditions were given one unit or less at a sitting while the malignancies treated were given two units at two-week intervals. Six cases of basal cell epithelioma were treated. All were longstanding, extensive lesions with bone involvement and all had received a great variety of treatment including radium, x-ray, curette and cautery, and even arsenic paste. None of these was benefited though treatment was persisted in for a considerable period of time in each case. Three patients with verrucae vulgaris were treated without benefit. One patient with an extensive and resistant keratoderma of the feet (probably tinea) failed to respond. Two cases of senile keratoses cleared rapidly. Two cases of lupus vulgaris, both extensive and resistant to other forms of treatment, failed to improve materially. Of the patients with palmar eczema, one cleared and remained well while the other improved but showed some recurrences, as it had previously, under x-ray and ultra-violet light. One case of lichenification cleared while another flared up and became ex-

tensive and acute. I have treated no patients with basal cell epithelioma that I felt were curable by other better known means. A number of these will be treated in the near future, selecting at first those which present some measure of difficulty, such as lesions close to the eye.

CONCLUSIONS

1. The grenz rays described by Bucky are to be considered as x-rays of very long wave length, differing from the rays previously employed in dermatology only in quality and quantity rather than in kind.

2. These supersoft x-rays offer another means for combating skin disease, but will probably not supplant the shorter wave lengths though further experience may show them to be superior in some particular instances.

3. The unpleasant late sequelae which occur following overirradiation with short wave lengths do not occur with the doses so far employed. The safety of repeated exposures is questionable and can be proved only by extensive experience.

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DISCUSSION

GEORGE D. CULVER, M.D. (323 Geary Street, San Francisco).—The pleasing feature of Doctor Taussig's paper is that of fairness in judgment and conservatism in conclusions. If it could have been possible in the last two decades to have had conservatism as the watchword in the use of radiant energy there would be fewer heartaches and less recrimination now.

I know nothing from personal experience about the so-called grenz rays, and am perfectly willing to be

criticized for offering this brief discussion. However, it is not the first time something new in radiant energy or some new method of its use has been offered as being near to fool-proof. There are few of us that have done any considerable work along such lines that are blameless. I concede that I am not in the ranks of those who can look back without regret.

It would seem that overenthusiasm with the over-soft x-rays may also leave its trail of disaster unless the check of clear judgment and selective usage is as closely followed, as it should be with the x-ray and radium as we know those agents now. Doctor Taussig's admonitions are worth while.

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WILLIAM E. COSTOLOW, M. D. (1407 South Hope Street, Los Angeles).—Doctor Taussig deserves credit not only for pioneering this new form of radiation therapy on the Pacific Coast, but also for his conservative attitude toward a new method of treatment. He has clearly described the apparatus, its technique of production, and the physics of the grenz or supersoft x-rays.

The mechanical simplicity and electrical safety to both the patient and physician, together with the fact that physical measurements and standardization of dosage are not necessary as with the ordinary short-wave x-ray, causes the grenz ray apparatus to be desirable for the average dermatologist who does not have available the services of a trained physicist. Nevertheless, this apparatus must be considered as a type of x-ray apparatus, and care should be taken not to produce overdosage. As brought out by Doctor Taussig, radiographs of metal objects have been produced through filters with these rays. Hence, the rays cannot be considered as entirely without danger if prolonged and repeated exposures are given.

At the Soiland Clinic in Los Angeles, we have been using the grenz or supersoft x-rays since December 1928. The apparatus which we have employed is the "Dermix" transformer, manufactured by Koch and Sterzel of Dresden, with the Müller tubes from Hamburg. We have not treated any cases of skin malignancy with the supersoft x-rays and do not intend to for the present. We believe that if radiation is to be used in skin malignancy heavily filtered radium should be chosen. It does not seem advisable to use a method of radiation so superficial in its action as the supersoft ray method for the destruction of malignant lesions which, although often appearing superficial, really have deep extension.

In our experience the most satisfactory lesions for the grenz ray therapy have been senile keratoses. In the treatment of a considerable number of these lesions we have found the supersoft rays almost specific. Of four cases of lupus vulgaris treated, one seems entirely well, one considerably improved, and two unimproved. Several patients with localized areas of eczema have been relieved. It is only possible to treat relatively small areas with the grenz apparatus, which is quite a disadvantage in some cases. One case of pruritus ani was completely relieved, and one case of moderately localized tinea capitis was entirely cured with two treatments. In our patients who were treated with the supersoft rays, we have not observed any evidence of later skin atrophy or telangiectasia, such as may follow short-wave x-ray radiation. However, as has been brought out, this is a later possibility and care should be used in prescribing repeated doses.

The supersoft or long wave x-rays certainly deserve a place in dermatological treatment and should be given a thorough trial, especially in the superficial nonmalignant conditions, where they may partially supplant the present type of x-ray radiation.

✽

MOSES SCHOLTZ, M. D. (1930 Wilshire Boulevard, Los Angeles).—The report by Doctor Taussig is both timely and instructive. I fully appreciate and concur in his conservative judgment.

The introduction of grenz rays in therapeutics was looked forward to by dermatologists with great expectations. It was hoped for that a new border-line modality between ultra-violet light and x-rays was discovered and that it would combine to some degree the physical and clinical properties of both.

Had this proved to be true, a new promising vista of therapeutic possibilities would have been open to dermatologists. Unfortunately subsequent research by physicists and clinicians refuted this expectation by establishing that grenz rays are not a border line for rays, but merely a variety of x-ray of an extremely low voltage.

My personal experience with grenz rays is very limited as I have used the apparatus for clinical observation only during the last few months. I was able to try it out in about two dozens of various types of superficial dermatoses.

It is apparent that the field of clinical application of grenz rays in dermatology is bound to be very limited for a technical reason: the small size of the aperture of the Müller tube and the short distance used in the exposure allow the treatment of only very small patches.

The second and still more important drawback revealed in my experience, and observed by others, is persistent pigmentation lasting for many months. This obviously precludes the use of grenz rays on the face and other exposed parts, particularly in blond individuals with fair skin.

In my limited series I saw patches of chronic squamous eczema, psoriasis, senile keratoses, and incipient superficial epitheliomata clear up after one or two treatments. The dosage used was in accordance with the depth of the lesions, varying from one-half to full erythema dose.

It seems that the dosage of grenz rays is not standardized as yet either in regard to individual dermatoses or to individual Müller tubes. Thus, on my machine an exposure for one minute of the flexor surface of the forearm with eight milliamperes, eight kilovolts, and six centimeter skin distance produced a mild erythema, but an exposure for two minutes produced a distinct erythema. The exposure for three or four minutes, as recommended in the literature, produced in a few cases a sharp reaction with acute exudative dermatitis.

In spite of the somewhat disappointing character of the early reports, it seems to me that grenz rays will find their place in dermatologic therapeutics, at least, in a few types of carefully selected dermatoses. I believe that the maximum of clinical usefulness of grenz rays will be found in the range of medium and small fractional doses, which so far have not attracted sufficient attention on the part of the early observers.

Bearing in mind the fact that grenz rays are merely a variety of x-rays of extremely low voltage provides a sufficient safeguard for their clinical use in careful and qualified hands. Grenz rays call for further clinical observation and research to define the dosage and clinical indications, and are not ready at present for a broadcast in the general practice.

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DOCTOR TAUSSIG (Closing).—At the time the above paper was presented no instance had been reported of the occurrence of telangiectasia or atrophy following grenz ray therapy, the one exception being doubtful. At the Portland meeting of the American Medical Association, Eller showed photographs of telangiectasia which followed a moderate erythema dose and stated that he had seen a few of these late changes, bearing out the warnings of a number of the more conservative writers. These late effects are apparently less frequent than with x-rays of shorter wave length and perhaps less intense, but the danger is there and the statements of some of the enthusiasts concerning the safety of these rays must be disregarded.

BRONCHOPNEUMONIA IN EARLY CHILDHOOD—ITS TREATMENT*

By E. P. COOK, M. D.
San Jose

DISCUSSION by Edward J. Lamb, M. D., Santa Barbara; William A. Beattie, M. D., Sacramento; Adelaide Brown, M. D., San Francisco.

THE knowledge which has been gained in recent years concerning the etiology and pathology of bronchopneumonia has not resulted in any striking increase in our ability to cope with this disease successfully. Possessing no specific remedy, the problem is at once a challenge to our therapeutic ingenuity and resourcefulness. Many different agents of undoubted worth are used, and it is my present purpose to attempt to assemble and coordinate these procedures, none of which are original, into a systematic plan of treatment. Such a plan places in the foreground the carefully considered management of the case as a whole, rather than focusing our attention too minutely on drug therapy. Pneumonia is simply another instance in which the child, as a whole, is sick, even though the major pathological processes are limited to the air passages and lungs.

PATHOLOGY

The upper air passages, being inhabited by a great variety of microorganisms and extending directly into the lungs, make possible the development of bronchopneumonia under a variety of conditions. Infectious diseases are by far the most important group of predisposing causes. Measles, whooping-cough, and influenza are familiar examples. Simple infections of the respiratory tract, the so-called mixed respiratory infections, and bronchitis are also of the utmost importance. We may, in fact, have great difficulty in determining whether or not a bronchitis has advanced to a point where it should be called bronchopneumonia. Fortunately our treatment does not depend upon the answer to this question, but rather we must be guided by the degree of illness as evidenced by the toxemia, fever, and general prostration of the patient.

SYMPTOMS

The clinical course of a primary infection is fairly definite. The abrupt onset with fever, prostration, and rapid pulse denotes an acute infection. The appearance of cough and dyspnea will direct our attention to the lungs, where the initial signs are faint or impure breath sounds over a localized area, followed in a day or two by râles. Bronchial breathing is heard only where large areas of consolidation occur. Physical findings will change from day to day as different bronchial areas become involved with exudate. The duration is indefinite, varying from a few days to several weeks or months.

In the secondary type of infection the problem is more difficult. A sudden rise in temperature and onset of cough during the course of an acute

infectious disease should never fail to direct one's attention to the lungs. X-ray examination of the chest will serve to confirm the diagnosis.

PROPHYLAXIS

Like every other disease, bronchopneumonia is easier to treat by preventing its development; and since certain things can be accomplished along this line, it is well to bear them in mind. It is not controllable by ordinary public health methods of isolation, quarantine, and supervision of food and water supply. Without introducing an alarming note, it is quite in order to state frankly to parents of children having measles, whooping-cough, influenza, and the other acute infectious diseases that the mortality in these conditions is in large part due to the development of pneumonia, and therefore their utmost care and co-operation is urged in keeping the child in bed and preventing exposure. Persons with acute or chronic upper respiratory infections should at all times be kept away from the premature and congenitally weak infant, but where this is not possible, a gauze mask worn by the mother is effective.

One thing which is of the utmost importance, but which frequently is accomplished with difficulty, is putting children to bed when they have a fever and keeping them there until they are entirely well. Too often mothers will allow the pleas of the child to overrule their judgment or their discipline and a slight cold becomes a more serious matter by reason of exposure and fatigue. Furthermore, it is a common custom for parents to allow a child to get up as soon as the temperature becomes normal. The only safe rule to make is that an afebrile period of at least forty-eight hours should elapse after a respiratory infection before a child is allowed to be out of bed. Even then it should be a matter of one or two hours the first day, with a convalescent period of three days before he is allowed to go to school. A child has no judgment in conserving his strength, and the minute he is up he goes at top speed until exhausted.

Ether anesthesia should not be administered to a child suffering from even the mildest form of respiratory tract infection except in case of a grave emergency.

NURSING CARE

The first requisite in successful management is a capable, quiet nurse or attendant who understands the value of sickroom serenity and efficiency. A patient in the hospital has this matter taken care of automatically and the physician is relieved of a great responsibility, but the majority of cases are treated at home and by a mother who is perhaps willing and cooperative but lacking in nursing sense. Some people have it naturally, but we must recognize the instances where special instructions are necessary and by all means give them. This means sitting down and spending time in fundamental nursing instructions, but before we can do that we, ourselves, must know what constitutes good nursing care.

Temperature Readings.—A mother should be taught to read a thermometer, take the pulse and respiration so that these important observations

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can be entered on a chart which we prepare for that purpose. A graphic chart is most valuable in following the course of a fever, and may show the first indication of an arising complication.

Ventilation.—Warmed fresh air is vital to the patient's well-being. Adequate ventilation may be secured through open windows, but during cold or stormy weather these should be in an adjoining room rather than the sickroom. This air should be warmed to a temperature between 65 and 68 degrees as actually recorded by a thermometer. In this connection I have observed a difference in temperature of six degrees between the height of a standard crib and the height to which it was raised by putting twenty-inch blocks under the legs. Hence the necessity of placing the thermometer near the child. Such a temperature permits the child to be clothed lightly. It is exhausting even to watch a hot, restless child struggle under many layers of clothing and bed-covers, with the necessity of lifting the added weight with every inspiration.

In addition to warming, the air may also be moistened to an advantage. Plain unmedicated steam is very effective, or compound tincture of benzoin, oil of eucalyptus, or turpentine may be added to the water. Inhalations may be given for thirty minutes at intervals of every two or three hours and preferably under a canopy. It is not advisable to use a closed tent because of the extreme heat which develops, with resulting perspiration and possible chill afterward.

Medicated Air.—The safest apparatus is an electric vaporizer, or an electric plate on which is placed an open vessel. The croup kettle with an open flame is more commonly employed at home, but certain precautions must always attend its use. First it should not be placed so close to the crib that the child can reach out and get a steam burn, or tip it over and start a fire. The kettle should never be allowed to boil dry if benzoin is used in the water because such fumes are most irritating. All of these mishaps have occurred in my experience at one time or another, but constant warnings have reduced their frequency.

Inhalations should be continued as long as there is a distressing cough or scanty secretion. The milder cases may be sufficiently relieved by simply allowing a kettle to boil constantly in the sickroom.

Diet.—It is quite possible to give specific instructions to the nurse regarding diet, but these will necessarily vary with the individual child. Bearing in mind the possible protracted course of the disease, it is necessary to encourage the intake of as much nourishment as the digestive apparatus can tolerate. This is where an understanding nurse can be of great assistance. The various foods should be bland and easily digestible. These would include milk, broths, soft eggs, pureed vegetables, or creamed vegetable soups, scraped beef, jelly, junket, custard, and fruit juices. Milk is sometimes vomited, but this may be avoided by giving it hot and with the addition of bicarbonate of soda. In general, it is better to offer small

amounts of food at more frequent intervals than three large meals a day.

Care of the Bowels.—A daily bowel movement is to be desired, but it is the exception to have this occur spontaneously. If the movements are soft there is no objection to irregularity, but if constipation occurs the use of mild laxatives is indicated. Milk of magnesia, cascara, and phenolphthalein are usually effective, aided when necessary by an enema to empty the lower bowel. The problem should always be handled so as to disturb the patient as little as possible.

Counterirritants.—The use of some form of counterirritation is beneficial when pleural pains and cough are prominent symptoms. Mustard plasters are perhaps most effective. Variations in the strength of mustard and the sensitiveness of the skin make it impossible to give definite instructions regarding the proportions until a trial has been made. Strengths varying from one of mustard to six of flour to as strong as equal parts may be used. This is mixed with cold water, spread thinly on a cloth, warmed, and applied to back, sides, and chest for a period ranging from ten to thirty minutes. This may be repeated as often as every four hours.

Counterirritation is otherwise accomplished by applying flannel cloths wrung out of hot water and mustard, or with turpentine stupes.

Hydrotherapy.—A maxim which I have always thought particularly apt is "plenty of water inside and out." A child will voluntarily take a certain amount, but rarely is it sufficient to meet the demands of his toxemia. Further intake may be encouraged by offering orangeade, lemonade, any of the canned fruit juices or bottled soda water, given as such or diluted with water.

Sponging should be carried out daily at least once. A sponge bath at a temperature of 90 degrees, given under the covers so that the child will not be exposed to the air, often results in a refreshing sleep of several hours. Hyperpyrexia in itself may do little harm unless accompanied by nervous manifestations. An ice-bag to the head and a tepid sponge can transform a delirious patient into one enjoying a quiet sleep.

Just a word regarding sponging: Most mothers fear the procedure as one which may cause the child to take more cold. This should not result if the patient is not exposed and the bath is begun at a temperature of 95 degrees, gradually being reduced to 90 degrees and even 85 degrees, according to the degree of fever. To be most effective the cloth should be wrung fairly dry, the bath continued for ten to fifteen minutes, and the moisture allowed to evaporate on the skin.

Abdominal Distention.—This unpleasant occurrence is quite frequent. When it first appears, all food should be withheld for twelve hours and a cathartic given.

Turpentine stupes, and enemas of soda, turpentine, or milk and molasses will relieve the milder cases. If these are ineffective, one-half cubic centimeter of obstetrical puitrin should be given every three hours, or as needed.

A persistence of the condition after these measures have failed—and they unfortunately will fail

sometimes—usually means the development of peritonitis or approaching death as a result of circulatory failure.

DRUG TREATMENT

The parents' importunate demands that something be done in a critical case often leads us into the error of prescribing medication which serves no useful purpose in our scheme of treatment, but does irritate and exhaust the child in the effort to administer it. Furthermore, it is apt to turn him against taking nourishment by mouth and make it difficult to give that which is most needed.

These parental demands may be met by emphasizing the importance of rest, less disturbance, and the hour by hour nursing care. I believe we are well repaid for such time spent in education. A case in point was a mother who stated to me recently that she had succeeded with minor colds of the past winter by the common-sense care which she had given her children, as learned by experience with pneumonia the preceding year. and drugs played very little part in this case.

Cough.—Children with pneumonia always cough and this symptom does demand our consideration. The warmed fresh air, inhalations, and counter-irritation are the first things. Hot drinks are very soothing. One ounce of hot milk with a little baking soda, given frequently, will often allay a distressing spasm of coughing. In the early stage, when secretions are scanty, syrup of hydriodic acid is effective. To this may be added chloroform water, sodium bromid or codein as a sedative and the whole made palatable by flavoring with syrup of raspberry. Codein is a drug which can be given with sure sedative effect and no danger of habit formation. I have never heard of a codein addict.

Rest and Sleep.—Rest and sleep are very necessary in the conservation of strength, but hyperpyrexia may result in a distressing degree of restlessness or insomnia. At such a time it is desirable to insure sleep and the use of sodium bromid, veronal, or other soporific is definitely indicated.

Cyanosis.—Cyanosis may appear as a result of improper ventilation, extensive involvement of the lung tissue or plugging of the bronchi with secretions. The inhalation of oxygen has been of decided benefit, although this is an open question with many clinicians who feel it to be inefficient.

Circulatory Failure.—Circulatory failure has always been one of the most feared symptoms in pneumonia. As a matter of fact clinical study has shown that as an isolated event it occurs very seldom. Rather it is associated with a terminal collapse in which there is respiratory failure, abdominal distention, acute sepsis, and rapid death. Heart stimulants, such as strophanthin, caffein, atropin, or adrenalin, are to be given. Routine digitalization has given rise to a great deal of discussion and may be a harmless procedure if not carried too far. It has not been my practice to give it as a matter of routine.

Respiratory Failure.—Respiratory failure as evidenced by dyspnea, cyanosis, and restlessness are more amenable to stimulation. Nothing is more effective than the mustard pack. It is

quickly and readily prepared from materials which are instantly available. Further than this, atropin, oxygen inhalations, and whisky or brandy may be used.

Specific Therapy.—If bacteriological study has shown the patient to have a Type I pneumococcus infection, specific serum therapy should not be forgotten.

BLOOD TRANSFUSION

I have recently been interested in the effect of blood transfusion in cases of prolonged acute infections and have transfused six infants who were ill with bronchopneumonia.

One was a protracted case which had been through a stormy two weeks and was showing definite improvement when the other lung became involved. About 150 cubic centimeters of whole blood was given, and although the child did not completely recover for another three weeks it was the impression of both myself and the parents that the child's vitality was definitely greater after the transfusion. A complicating factor was a double suppurative otitis media.

The second case was one which was sent into the hospital with a complicating empyema. A rib resection was done, and 125 cubic centimeters of whole blood given; the patient died twenty-four hours later.

The other four cases were infants who had been sick from four to eight days with profound toxemia and prostration. Amounts of blood varying from 86 to 125 cubic centimeters were given, and each one showed a prompt decline in the temperature and improvement in the general condition. They were convalescing within a week. The oldest of these six babies was sixteen months. In each case the blood was given into the longitudinal sinus.

COMPLICATIONS

Dehydration.—Some of the sickest children I have seen have been those who were allowed to develop a marked degree of dehydration. I have already mentioned the necessity of forcing fluids by mouth. If a satisfactory amount, which means from one to two quarts a day, cannot be given in this manner, we must resort to infusions or intraperitoneal injections. Large amounts of normal salt solution can be given by hypodermoclysis. Glucose solution may also be given in this manner although there are reports of cases in which sloughing occurred after such injections. In the peritoneal cavity, Ringer's solution is preferable. From 200 to 500 cubic centimeters may be given every eight to twelve or twenty-four hours with complete absorption and without irritation. This latter advantage makes it superior to normal saline or glucose. The giving of fluids by rectum is very unsatisfactory. A few ounces may be retained at first, but repetition of the procedure results in such irritation of the rectum that further retention is impossible. The intraperitoneal route is the one of choice because it is less painful and can be repeated frequently. At the same time absorption is not so rapid as to thrust a burden on the cardiovascular system.

Otitis Media.—Infection of the middle ear is always possible when there is an infection in the upper air passages; in pneumonia it is one of

the most frequent complications. The infection may be through the blood stream or through the eustachian tube, the latter favored by the ever present cough. The only certain way to detect the condition early is by frequent examinations of the ear-drums. Otitis media may, and frequently does, occur without causing pain. The ears are objects of suspicion also when there is a sudden rise in temperature, increasing restlessness, rolling of the head from side to side, or the definite complaint of earache.

Pain alone is relieved by the application of dry heat or moist compresses. Carbolyzed glycerin is a favorite remedy and causes a local anesthesia of the drum membrane which is useful if a paracentesis becomes necessary.

The best procedure is to irrigate with hot boric acid solution. One teaspoon of boric acid crystals is dissolved in a pint of water, heated to a temperature of 100 degrees Fahrenheit, and placed in an irrigating can which is held above the ear about one foot. This avoids excessive pressure against the drum. A pointed glass tip is used on the end of the tubing and each ear canal douched with the entire amount. This is repeated every three hours and serves not only to allay the pain, but also to relieve the inflammation. Once the mother understands the procedure, it is easier than the rubber syringe method, and more effective because of the constant gentle flow.

An ear-drum which shows increasing redness and swelling should be incised early. If carefully performed it will not result in introducing any outside infection and does allow the escape of gas and serum. Prompt healing and relief of the symptoms will usually follow.

If distinct bulging of the drum membrane has occurred, the paracentesis will be followed by drainage of pus for from a few days to three weeks and sometimes even much longer. During this period, douching should be carried out carefully and continually, and the external ear kept scrupulously clean to avoid the development of furunculosis.

Pyelitis.—Urinary tract infections will frequently follow a focus in the respiratory passages, and while pyelitis is not a common sequel of bronchopneumonia, examinations of the urine must be made as the only means by which its presence can be detected. A moderate albuminuria is to be expected, but persisting pyuria demands the recognition and treatment of pyelitis.

Empyema.—Empyema is a serious, though not very frequent complication of bronchopneumonia. In the daily examination of the chest the presence of fluid may be detected. An exploratory thoracentesis will confirm the diagnosis. If the effusion is clear, simple drainage may relieve the condition without recourse to surgical drainage. Purulent fluid demands rib resection and adequate drainage. Confidence must be placed in a competent surgeon to decide the correct procedure in the individual case.

Meningitis and Meningismus.—Symptoms of meningeal irritation demand early spinal puncture for two reasons. First, it is the only way by which we can differentiate meningitis from

meningismus; and, second, it is good treatment in either case. Repeated spinal drainage offers the best hope of relief in meningitis, and will alleviate the marked nervous symptoms of meningismus.

CONVALESCENCE

All children with bronchopneumonia should be kept in bed at least one week with a normal temperature. This time should be extended for the severe cases and those with persisting cough, but in any case the child should feel perfectly well before he is allowed to get up. Recurrences would thus be avoided and ultimate complete recovery hastened. Exercise at first should be very limited and the patient's initial period out of bed should be no longer than fifteen to thirty minutes. This is gradually increased each day, as returning strength permits. In allowing the patient to be out of doors, it must be remembered that the child has become accustomed to the atmosphere of the house and these fresh-air periods must be carefully guarded and of short duration.

The diet need not be limited and the appetite is usually such that it is not necessary to force food. Cod-liver oil is one of the best reconstructive tonics; syrup of ferrous iodid or saccharated carbonate of iron may be added if the infection has been prolonged to the point of producing a secondary anemia.

SUMMARY

The treatment as outlined is based upon clinical observation and experience with cases in the writer's practice. It necessitates highly intelligent care: care which safeguards against serious complications by treatment of simple respiratory infections, which recognizes all possible complications, and which is painstaking and tireless in surrounding the patient with all possible hygienic protection. The fundamental principles are proper rest, fresh air, proper food, hydrotherapy, and symptomatic medication.

215 Sainte Claire Building.

DISCUSSION

EDWARD J. LAMB, M. D. (1515 State Street, Santa Barbara).—Doctor Cook's paper brings before those present at this Pediatric Section a conservative, concise and effective means of treating bronchopneumonia.

I consider the nursing care of these patients of the utmost importance. Quietness, rest, fresh air, and proper nourishment are the chief essentials.

I am glad to hear Doctor Cook emphasize the importance of fresh air being warmed to a temperature of 60 to 65 degrees. So many mothers and nurses feel that fresh air becomes stale when warmed to this temperature, and consequently our little patients suffer a relapse or reinfection when a portion of the exposed body becomes chilled by this cold air.

Concerning medication, great relief of dyspnea may be afforded by inhalation. Drugs given internally may be limited to atropin, iodin, opium (alkaloids), and ammonium salts.

WILLIAM A. BEATTIE, M. D. (Medico-Dental Building, Sacramento).—Bronchopneumonia is in most instances not difficult to diagnose, but in almost every case we are confronted with obstacles and difficulties in its treatment. There is no specific to use in bronchopneumonia, and for that reason, if for no other, we welcome the privilege of listening to this unusually well-developed system of its general treatment as presented by Doctor Cook.

We know that bronchopneumonia is largely a preventable disease, and too much emphasis cannot be placed on this phase of its treatment. In this disease

most certainly "an ounce of prevention is worth a pound of cure." Advice given to parents as to the proper method of treating common "colds," or even better, methods of preventing the spread of this common infection, will help in no small measure to prevent the development of bronchopneumonia. In the vast majority of children who contract this disease, we find them either subnormal in nutrition or neglected in the care given them during the course of a simple infection of the upper respiratory tract. The consequences are the development of the dangerous disease, bronchopneumonia. The fact of lowered resistance may be the primary condition which has made them a victim to infection. In other words, bronchopneumonia is usually a disease secondary to a mild respiratory infection which is found in the majority of instances, in children whose care or development has been faulty. It is therefore of particular importance that in any outline of the treatment of bronchopneumonia, special emphasis be laid upon prophylactic measures.

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ADELAIDE BROWN, M. D. (909 Hyde Street, San Francisco).—Doctor Cook's paper emphasizes the importance of nursing in bronchopneumonia. Every mother should be able to take temperature, record bowel movements, diet (amount taken), and count pulse and respiration in the sleeping child, and keep a log of the day's happenings. *Written* instructions should be left, whether the mother or a nurse carries out the orders. In the one case they are an encouragement and save uncertainty; in the other, they save discussion between the mother and nurse.

In using a croup kettle or a steaming apparatus, I have it set in a metal basin as a precaution against fire. For the restless baby, or young child with high temperature, packs changed every two or three hours are less irritating than sponging and avoid narcotics and reduce temperatures.

For enemata to reduce gas, milk of asafetida with equal parts of water or molasses and milk do not irritate as more powerful purgatives do.

Conservation of strength is the sheet anchor of success in these cases.

SURGICAL AND NONSURGICAL FACIAL NEURALGIAS*

By MARK ALBERT GLASER, M. D.
Los Angeles

DISCUSSION by Samuel D. Ingham, M. D., Los Angeles; H. Douglas Eaton, M. D., Los Angeles; Walter F. Schaller, M. D., San Francisco.

USUALLY when neuralgia of the face is considered, attention is directed to the trigeminal tract. This neuralgia is an extremely important disease entity, but the many painful affections involving the face and referable to other cranial nerves should not be disregarded.

TRIGEMINAL NEURALGIA

Trigeminal neuralgia was recognized by Avicenna in A. D. 1000, and was later described by Schlichtung (1748), Nicolous André (1756), who first named it "tic douloureux," and Fothergill (1773), who accurately described the disease. Very little can be added to the original description of acute attacks of sharp, lancinating pains, usually with freedom from pain between attacks, but in some cases, a sense of soreness persists in the painful zone. The attacks of pain are brought

* Read before the Neuropsychiatry Section of the California Medical Association at the fifty-eighth annual session, at Coronado, May 6-9, 1929.

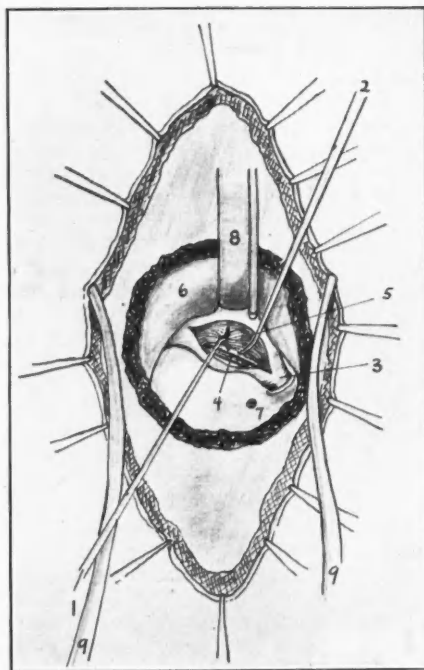


Fig. 1.—A semi-diagrammatic sketch demonstrating subtotal section of the sensory root of the trigeminal nerve. 1. Hook cutting the second and third division fibers. The fibers supplying the first division are intact. 2. Hook pulling the sensory root upward so as to expose the motor root. 3. Third division of the trigeminal nerve. 4. Motor root. 5. Ganglion. 6. Dura. 7. Middle meningeal artery. 8. Illuminated retractor elevating the brain. 9. Self-retaining retractor.

on by contact, and in the more severe cases by even a breath of air or spontaneously. The severity of the pain varies greatly, and in most cases the individuals may carry on their daily routine; it is only in rare cases that they become confined to bed fearing the extreme consequences of the attacks. The pain is superficial and is in the zone of the trigeminal nerve. Trigger zones are present (Patrick), and there are never any areas of anesthesia.

Trigeminal neuralgia is a disease of unknown etiology, spontaneous in origin, continuing uninterrupted through the patient's life, unless arrested by surgical procedure. No single instance of spontaneous cessation has been recorded. The treatment of trigeminal neuralgia is either alcohol injection of the nerve trunks, or surgery. Recently trichlorethylene has been introduced and the results have been satisfactory in some cases, though only temporary.

The surgery of the trigeminal tract is one of many interesting advances. Rose in 1892 resected the ramus of the mandible and curetted away the gasserian ganglion. Hartley and Krause published their contributions a month apart which consisted of the intracranial section of the peripheral branches of the gasserian ganglion through a middle fossa approach. The next great step was made by Spiller and Frazier when they divided the sensory root (1901). In 1915 Frazier advised a subtotal resection so as to prevent a

keratitis (Fig 1). In 1919 Frazier again contributed the preservation of the motor root. More recently Dandy has advised the section of the sensory root at the pons, claiming many advantages for this new procedure over the previous operations.

The low mortality, which, in the hands of Frazier has been 0.37 per cent, the relief of pain and the prevention of keratitis does not as yet warrant a change from this well established technique. As most of the trigeminal neuralgias do not involve the ophthalmic division, the preservation of the upper third of the sensory root so as to maintain the sensory supply to the cornea is one of the most important contributions.

TUMORS OF THE GASSERIAN GANGLION

Tumors of the gasserian ganglion have been reported by Russell, Frazier, Peet, Sachs, Shelden, etc. Many of these tumors arise from the dural sheath of the ganglion; others are nasal pharyngeal tumors; while still others are metastatic. Tumors may readily be diagnosed when a patient presents a clinical picture of pain in the trigeminal region plus anesthesia with paralysis of the muscles of mastication, or associated with other cranial nerve involvement.

ATYPICAL NEURALGIA

From the group of trigeminal neuralgias have been separated a series of patients complaining of pain in the face, which was not relieved by section of the sensory root, or by any other procedures which relieved the pain of trigeminal neuralgia. For want of a better term this group has been designated as "atypical." A study of a series consisting of one hundred and forty-three patients (Glaser) demonstrated that whatever type of therapy was undertaken, the pain usually became worse. Among the procedures attempted for the relief of pain were: injection of alcohol in branches of the trigeminal nerve; cocaineization and injection of the sphenopalatine ganglion; extraction of teeth; drainage of sinuses; supra-orbital and infra-orbital nerve avulsions; nasal operations; cervical sympathectomy (Frazier); stripping of the peri-arterial (carotid) plexus (Frazier); subtotal section of sensory root of trigeminal nerve; mastoid operations and pelvic operations. This disease is more frequent in females; both sides of the face are equally involved, and is more common in the first, second and third decades. Some patients present a complete arc of pain, as in Figure 2, which extends from the lower jaw to the upper jaw, malar region, nose, over the eye, in the eye, under the eye, frontal area, temporal area, parietal area, behind ear, front of ear, through ear, to occipital region, suboccipital region, neck, shoulder, or arm. In the series of cases reviewed, ten areas of pain distribution were determined, all falling within the zone herein considered. Various combinations of these areas were present, as was also pain in single zones.

Analysis of the type of pain of which these patients complained demonstrated an extraordinary number of descriptive adjectives. A single

adjective was not always used; frequently there were several, and in some cases the patient was wholly at a loss to describe the pain. There is one outstanding characteristic, however, in which all concurred—the pain was not superficial; it was not referred to the surface like that of trigeminal neuralgia; it was deep-seated in the tissues, in the bone, or in the eyeball. One is in the habit of recognizing various types of sensation as thermal, pain, tactile and pressure. Those of *tic douloureux* invariably imply thermal sensation and a sense of sharp, cutting or stabbing pain; those of atypical neuralgia seem frequently to imply pressure sensations, as throbbing, gripping, pulling, bursting, and the like. The pain of *tic douloureux* is essentially paroxysmal with intervals of complete relief. The pain of atypical neuralgia is essentially persistent and continuous, with periods of days in which there are severe exacerbations. During the first two or three hours of these aggravated periods the pain gradually increases until the height is reached, after which the intensity slowly subsides, until at the end of the third day or so the chronic phase is resumed.

There are many variations from this rather typical history. There may be an interim of from three to nine months. A few cases showed a remission as long as from two to three years. During these remissions and these interims some patients were entirely free from pain while others had a continuous feeling of oppression or aching in the region of the pain zone, though not of such severity and intensity as during the exacerbation.

None of the patients included in this survey was relieved by any therapeutic measures. In a few the pain was eased by the administration of coal-tar products, or the common alkaloids such as codein and morphin. Mention may be made in passing of the common use of opiates in the atypical neuralgia, while those of true *tic douloureux* flatly refuse opium or its derivatives.

The factors aggravating pain may be divided into general—such as changes of temperature, changes of climate, and menses. These factors were much more frequent than the local conditions, such as washing the face, brushing the teeth, or eating, the latter being much more frequent in trigeminal neuralgia.

In conjunction with the expression of pain, many patients had associated sympathetic phenomena, such as lacrimation, edema of the eyes, unequal pupils, corneal injection, exophthalmos, salivation, nasal discharge, flushing of face, aural discharge, nausea and vomiting, perspiration.

SPHENOPALATINE NEURALGIA

Sluder, after a careful study of the anatomical relations of the sphenoid and posterior ethmoids, demonstrated that in many cases these cells were in close proximity to the nasal ganglion. He assumed that if inflammation of the optic nerve could occur from infection of these sinuses there



Fig. 2.—Atypical neuralgia. The dots indicate the complete pain distribution. The dashes indicate the sensory distribution of the trigeminal nerve. Note how the pain of atypical neuralgia crosses the sensory distribution of the trigeminal tract.

was no reason why the nasal ganglion would not suffer.

A history of coryza was followed by pain in the root of the nose, in and about the eye, the upper jaw and teeth, occasionally the lower jaw and teeth. This pain also extended backward to the temple and above the zygoma to the ear, and was always severest at a point five centimeters back of the mastoid. It could also extend to the occiput, neck and shoulders, or even the arm, forearm, hand and fingers. Associated with this pain was a "stiff" or "aching" throat, or itching of the hard palate. In addition, there were sympathetic symptoms which could also occur without even pain. The patient was seized with severe sneezing and a thin, hot, profuse secretion occurred; the eyes were reddened; there was increased lacrimation; the pupils were dilated and there was dyspnea, dry râles, asthenia, and photophobia. If these cases do not get better by cocainization, he believed the pain was caused by a more central lesion of the maxillary and vidian nerve, secondary to sphenoidal inflammation. Intrasphenoidal application of cocain was then indicated. Injection of the ganglion, or applications of formaldehyd and silver was indicated in the more severe cases. If the patient is not relieved by these treatments the sphenoid should be operated upon, because the nerve and ganglion would then be imbedded in a chronic, inflammatory tissue. Many of these cases have only a transitory relief. These cases could not be explained clinically, and future study would necessarily have to solve the problem.

NEURALGIA OF THE SEVENTH CRANIAL NERVE

The ear sensory supply is extremely complicated and there are many areas of overlap. The sensory supply of the ear has been attributed to the seventh, ninth, and tenth nerves. Anteriorly the ear is bounded by the trigeminal tract, posteriorly by the cervical nerves. Ramsay Hunt

was the first to call attention to the sensory root of the seventh nerve and its sensory supply to the ear. A study of herpetic inflammations of the geniculate ganglion demonstrated that this ganglion supplied the tympanic membrane, the external auditory canal, the medius, the concha, tragus, antitragus, lobe of the ear, antihelix and fossa of the antihelix. Taylor and Clark reported a case of seventh nerve otalgia wherein the patient experienced paroxysmal pain in front of the left ear. The pain occurred for a half-hour almost weekly. It was stabbing, not only in front, but also deep in the ear. The seventh nerve, the nerve of Wrisburg, and part of the eighth nerve were divided. Operation resulted in relief of pain, complete facial palsy and deafness on the same side for four days. After six months the facial palsy improved; the patient was entirely pain free.

NEURALGIA OF THE EIGHTH CRANIAL NERVE

Frazier in 1914 sectioned the eighth nerve of a patient with Meniere's disease without results. Recently, Dandy has operated on a series of cases with the symptoms of Meniere's disease, that is, nausea and vomiting, with tinnitus in a deaf ear. Absolute cures resulted.

NEURALGIA OF THE NINTH CRANIAL NERVE

Weisenburg was the first to call attention to pain in the throat due to involvement of the glossopharyngeal nerve in a brain tumor (1910). In 1920 Sicard and Robineau reported three cases of glossopharyngeal neuralgia. Harris described two cases in 1921. Doyle in 1923 reported four more cases. Since then some twenty-five cases have been reported. Glossopharyngeal neuralgia consists of sharp, shooting pains in the region of the tonsil, base of the tongue, referred to the ear, and occasionally down the neck. There is a trigger zone in the tonsillar region and the base of the tongue. The attacks may also be brought on by swallowing and eating or may occur spontaneously. The operation is intracranial section and has been accomplished by Adson, Stookey, Dandy, with the entire relief of pain.

NEURALGIA OF THE TENTH CRANIAL NERVE

In deep-seated pain in the ear and throat, due to carcinoma, Fay gained relief by section of the



Fig. 3.—X-ray of tooth showing pulp stone in center.

tenth nerve when the ninth nerve, which had previously been sectioned, did not relieve pain. Pain of tuberculous laryngitis is referred to the superior laryngeal nerve of the vagus and can be relieved by injection of alcohol, or by section.

NEURALGIAS DUE TO MALIGNANT INVASION OF THE VARIOUS CRANIAL NERVES

Malignant disease about the face and neck with the terrific pains that result therefrom, and the extreme discomfort associated with sloughing surfaces, make the patient extremely miserable. The cauterization and x-ray treatment that is carried out causes an extreme degree of pain. It is in these cases that injection with alcohol, or section of the various nerve roots, will greatly ameliorate pain and lessen the patient's suffering, and will,

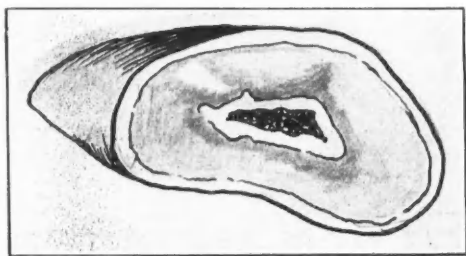


Fig. 4.—Cross section of the same tooth, showing presence of pulp stone in the center. (Tooth extracted by Dr. J. M. Silverman.)

in addition, allow the surgical and plastic procedures to be carried out painlessly. Pain deep in the ear is a symptom difficult to relieve, and it is for this reason that section of the glossopharyngeal, or the tenth nerve, may be indicated. Upon rendering these patients pain free, the morale is greatly increased, morphin is unnecessary, and even though these patients realize the procedure has nothing to do with a cure of their primary disease they are extremely grateful for the relief of this continuous, terrific, unbearable pain.

DENTAL PULP STONE NEURALGIA

Severe attacks of lancinating pain, referable to one tooth or several teeth, is a disease seen more often by the dentist. It is caused in many cases by pulp stones which are calcareous nodules imbedded in the pulp and which press upon the nerves. X-ray will demonstrate these nodules. Extraction of the tooth abolishes the pain (Figs. 3 and 4).

CONCLUSIONS

It is just as important to recognize the atypical form so as to desist from hopeless surgery as to recognize those surgical neuralgias which can be cured 100 per cent by operative means. Furthermore, those patients who suffer from neuralgias, due to invasion or irritation of the cranial nerves by malignant growth, should be afforded relief of pain either by alcohol injections or surgical measures.

In this paper I have only attempted to briefly consider the more salient and outstanding diagnostic features of the facial neuralgias.

727 West Seventh Street.

DISCUSSION

SAMUEL D. INGHAM, M. D. (1252 Roosevelt Building, Los Angeles).—The survey of the subject of neuralgias, as presented by Doctor Glaser, leaves little to be said except by the emphasis or discussion of details. The typical picture of *tic douloureux* is easily recognized and the most effective treatment is, of course, resection of the sensory root. The method which Doctor Dandy has been using recently, as mentioned by Doctor Glaser, is an approach by way of the posterior fossa under the cerebellum. It is interesting to note that Doctor Dandy states that he has been able to differentiate the pain from the tactile fibers in the sensory root of the fifth nerve at the point where they enter the pons. By cutting only the pain fibers, tactile sensation is preserved in the face and trophic ulcers of the cornea do not occur.

The injection of the different branches of the peripheral nerve with alcohol has a definite place in the treatment, especially with those patients who are poor surgical risks.

Medical treatment is generally unsatisfactory, although marked relief sometimes occurs from daily doses of castor oil over a prolonged period.

The atypical neuralgias consist of a heterogeneous collection, and tax the diagnostic ability of the physician.

It is of interest to note that important contributions to the knowledge of anatomy and physiology of the sensory cranial nerves have been made by the neurosurgeons.

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H. DOUGLAS EATON, M. D. (1136 West Sixth Street, Los Angeles).—Doctor Glaser, in his discussion of surgical and nonsurgical neuralgias, has brought to our attention a most important subject. Though these cases are not so frequent as some other less painful neurological conditions, when encountered they are most intractable to treatment.

Occasionally one sees a case of trigeminal neuralgia yield at least for a time to the removal of foci of infection of toxemia but, on the whole, one is quite ready to agree with Doctor Glaser that the treatment of this disease is operative either by alcohol injection or actual surgery. Successful surgery certainly works a miracle for these patients.

Frequently cases are encountered which must be classed in Doctor Glaser's atypical grouping. Such cases are not amenable to surgical or medical treatment and illustrate again the present limitations of therapeutics in organic neurology.

The objective in all the facial neuralgias we are called upon to treat should be accurate diagnosis, for on such a study is dependent any possibility of successful therapy. In facial malignancy, nerve surgery is often of tremendous value in relieving the extreme suffering.

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WALTER F. SCHALLER, M. D. (909 Hyde Street, San Francisco).—Neuralgia has many points in common with causalgia in the character of the pain, superficial stimuli causing attacks, and radiation of pain. For this reason and because of the preservation of sensation, contrasted with its loss in neuritis, I believe that the pathology will eventually be discovered in the sympathetic nervous system. Doctor Glaser points out associated sympathetic phenomena in his article. Pain in the domain of the trigeminus, affecting more than one branch, will at times be relieved by the injection of the one in which pain originates or shows a well marked trigger point.

In neuralgia of the ophthalmic division, Vincent of Paris has achieved a result by decortication of the

temporal artery when other surgical means had failed. Sluder has pointed to the sphenopalatine ganglion as a seat of atypical neuralgia, and Sewall of Stanford has devised a new surgical approach to this ganglion.

The treatment of severe neuralgias is tending toward surgery; many patients who have had temporary relief from medical measures or injections finally request permanent relief by neurotomies. The removal of focal infections in established cases has been far from satisfactory in my experience: a patient with a facial neuralgia of years' standing became edentulous soon after the onset. The diagnosis of reflex neuralgia, due to tooth impaction, is not made so frequently as in the past.

Doctor Glaser has given us a concise and comprehensive account of the present status of neuralgia. The profession should be on the lookout for atypical neuralgias, and avail themselves of the suggestions for treatment.

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DOCTOR GLASER (Closing).—I wish to thank Doctors Schaller, Eaton, and Ingham for their very interesting and instructive discussions.

TUBERCULOSIS IN SCHOOL CHILDREN*

SOME DIAGNOSTIC POINTS

By E. W. HAYES, M. D.
Monrovia

DISCUSSION by William M. Haff, M. D., Los Angeles;
Lloyd B. Dickey, M. D., San Francisco.

A CLEAR conception of the pathogenesis, the physical signs, and clinical symptoms of pulmonary tuberculosis in children has, I think, been the most perplexing problem that those of us who are dealing with tuberculosis have had to handle. An understanding of these factors, however, is of vital importance in our campaign against tuberculosis, for, as has been repeatedly demonstrated, if the disease is discovered in its early stage and the child properly handled, it can, for the most part, be overcome. On the other hand, if the disease is allowed to progress beyond the early stage, during both the period of childhood and that of adolescence, the mortality rate is high. Again, children who receive a severe infection and who do not succumb in early life, and who do not receive special care to enable them to overcome the infection, constitute from 70 to 80 per cent or more of our adult cases of tuberculosis. Dr. Walter Rathbun recently stated that he believes that we will find the missing link in the tuberculosis problem through the study of the child.

EARLIER IDEAS OF PATHOGENESIS

As to the pathogenesis, in 1876 Parrot stated that the primary focus of infection in children is in the parenchyma of the lung. In 1912 Ghon, in reporting numerous autopsies, confirmed Parrot's opinion. Following Parrot's and Ghon's work we were left with the impression that the tracheobronchial glands become involved by extension through the lymphatics from the primary focus in the parenchyma of the lung; that this primary focus, for the most part, heals; that sub-

sequent involvement of the lung proper is the result of a reëxtension of the disease from the tracheobronchial glands.

Some five or six years ago the national association appointed a committee of six men to formulate an outline or standard which would serve as a guide in our study and classification of tuberculosis in children. In their report this committee simply added to the classification which we have for adults, that of hilum tuberculosis. Hilum tuberculosis, as described, was a separate condition occurring as the characteristic disease of childhood, wherein the glands and the tissues around the root of the lungs were the seat of the disease. Here again the inference was that subsequent involvement of the parenchyma of the lung is, for the most part, a direct extension from this area.

MORE RECENT REPORTS

Since this report was submitted, a number of men, both clinicians and radiologists, have continued to carry on an intensive study of the child. This group includes such of the present workers as Rathbun, Myers and his associates, Dunham, Opie, McPhedran, Chadwick, and several others. The opinion of at least some of these men differs from that set forth by this committee, not only as to the pathogenesis, but also in the interpretations of physical and x-ray signs and clinical symptoms. The work of these later investigators has been so convincing that, at the present time, at least some of the original committee concur with them in their opinions. The result is that the National Sanatorium Association has now appointed a supplementary committee to help work out a further basis for the standardization and classification of pulmonary tuberculosis in children.

REVIEW OF THE FINDINGS OF OPIE AND MCPHEDRAN

The work of Opie and McPhedran, who for the past seven years have been carrying on this research work in connection with the University of Pennsylvania, has been particularly enlightening. Their work has been so thorough and their conclusions so important that I feel justified in taking a few minutes to review their findings before this gathering. During this seven years they have studied not only a large number of children, but they have also studied, by x-ray and tissue examination, four hundred pairs of children's lungs after they have been excised at post-mortem. According to their findings, subsequent involvement of the lung is an extension from the primary focus and not from the tracheobronchial glands. They grant that the extension of the disease from the hilum region into the lung parenchyma may occur when the glands break down and rupture into the capsule. Such incidence of spread, however, is so rare as to be almost a curiosity.

These men still regard tracheobronchial lesions, or the so-called juvenile tuberculosis, as important because they indicate severe infection, and the children in whom they occur are likely to develop diffuse pulmonary lesions from the primary

* Read before the General Medicine Section of the California Medical Association at the Fifty-Eighth Annual Session, at Coronado, May 6-8, 1929.

focus, but not as a direct extension from the tracheobronchial area.

The primary focus of infection in children is characteristically a basal lesion before the tenth year. It may appear as a circumscribed focal necrosis, as a diffuse irregular network, or as a more or less homogeneous density involving a part of the lobe. In general, this basal infiltration in childhood tends to clear up. Often the only evidence of its having existed is the finding of small deposits of calcium.

The apical infiltrations are more or less atypical in childhood. They are found, however, with comparative frequency, according to McPhedran, in children who live in the same house with open cases of tuberculosis. These apical lesions appear as soft strands proceeding from the pleura and diminishing toward the hilum, or as more or less blocked-out wedges, or as a mottling which is less well defined than in adults. The primary infiltrations in the upper part of the lungs of the child do not have so great a tendency to clear up as do the basal infiltrations.

Either one of these forms, that is, the basal or the apical infiltration, however, may advance rapidly without losing its original type. Again, it has been found that extensive and spreading infiltrations, particularly in the apical region, may exist for years without signs and without noticeable impairment to the health. Eventually, however, the great majority of such lesions, if unrecognized and untreated, will develop into manifest disease.

Up to about the sixth or eighth year the development of manifest disease in the lung of the child is considered the result of the direct extension of the primary focus of infection. Such disease tends to be acute and widespread. After the sixth or eighth year the manifest disease may be the result of a secondary infection, in which case it tends to be localized and chronic in type.

These infiltrations as a whole, for the most part, appear to rise close to the pleura either laterally, anteriorly, or posteriorly, and extend toward the hilum, often in wedge-shaped areas with decreasing density in contrast to the arborization of the trunk shadows, which diminish from the hilum outward; and when these clear, in like manner, they tend to clear from the periphery inward.

Doctor McPhedran has stated that if we compare the roentgenograms of excised lungs with sectioned specimens, and correlate these findings with x-ray exposures of the living where the exposures are synchronized to the heart beat, we can demonstrate that very slight changes in the parenchyma of the lung can be recorded in the films of the living.

The differential diagnosis of some of these lung infiltrations, particularly the homogeneous density of a large area of the lower lobe in nontuberculous pneumonia, rests on the typical onset in the child living in contact with sputum-positive tuberculosis, by the slow clearing of the density in the favorable cases as observed by the x-ray, by the

presence of an active tuberculin reaction and, at times, by the recognition of calcification in an associated lymph node.

The diagnosis and clinical significance of tracheobronchial glandular involvement have, in themselves, been subjects of much difference of opinion. Opie and McPhedran have found in their work that, with very few exceptions, the only definite evidence of tuberculosis of the tracheobronchial glands is the presence of calcium deposits as revealed by the x-ray. The exceptions to this dictum occur in rare fatal infantile cases where the gland may protrude sufficiently beyond the hilum shadow to be recognizable. Their extensive researches in the excised lungs and the lungs of the living have convinced them that without calcium deposits, glands involved even to the extent of caseation, either in the mediastinal region or in the hilum region, cannot be distinguished radiologically from the surrounding tissue. They conclude, likewise, that calcium occurs only in glands that are tuberculous.

Again, these same men failed to find any direct relation between D'Espine's sign and extensive involvement or calcification in the tracheobronchial glands. The enlarged glands, they found, do not extend to the spine except in a few rare infantile cases with massive caseation of the lymph nodes. The usual position of the involved glands is along the posterior or posterolateral aspect of the trachea.

In the same way they failed to find any definite connection between interscapular dullness and muscle spasm and enlarged tracheobronchial glands. The apparent widening of the hilum shadow, often described radiologically, may be found to be due to movement or to faulty position. Their conclusion is that there are no characteristic signs other than calcium deposits, and no symptoms due to uncomplicated tracheobronchial tuberculosis except in those very rare cases where it has extended through the capsule of the node.

They also found that D'Espine's sign, as well as paravertebral and parasternal dullness and bronchovesicular breathing in the interscapular region, occur in children that are normal.

Further, Opie and McPhedran feel from their findings that the so-called peribronchial thickening of the trunks and the apparent beading, which has more or less universally been given a pathological significance as an indication of the extension of the disease from the hilum region, should not be considered as such either in children or in adults. In a large series of specimens studied they found no pathological basis for the inference that this thickening is due either to a tuberculous or to a nonspecific respiratory infection. By the use of exposures synchronized to the heart beat they concluded that the apparent thickening of the trunks was due to movement set up in the accompanying artery by systole, and that the apparent beading was caused by branches coming off from the arteries at angles. We are not justified, then, in diagnosing tuberculosis by x-ray

findings without definite signs in the parenchyma or calcium in the glands.

Again, according to these authorities, another common diagnostic error which leads to false conclusions as to the pathogenesis of tuberculosis is the finding of apparent calcium deposits in almost all x-ray films of chests, particularly along the bronchi, where they branch, and in the region of the hilus. These shadows have been found to be due, in most instances, to vessels which are axial, or nearly so, to the incident or primary ray. In such cases the shadows of columns of blood of various lengths are cast on the films. They appear as dense areas, more or less clear and regular in outline. Such shadows may occur anywhere in the lung tissue except at the apex and in the extreme lateral margin. They are larger and more numerous in the hilus region, where the vessels are larger and more numerous. Shifting the plane of the x-ray tube will cause these shadows to disappear or reveal their true nature.

A calcified lymph node, on the other hand, may change its contour when the plane of the tube is shifted, but it will continue to be recorded as a shadow of consistent quality, finely and irregularly granular, or made up of softly lamellated or crenated lines, or irregularly stippled.

SIGNIFICANCE OF THESE OBSERVATIONS

The practical significance of these conclusions is, on the one hand, first, that pulmonary tuberculosis in the child is an involvement of the lung parenchyma; second, that this involvement may, and not infrequently does, progress to a considerable extent, where it exists in a latent condition, without giving any indication of its presence through physical signs or clinical symptoms; and, finally, that these latent lesions, unless discovered and treated rigidly, are prone later to develop into serious manifest disease.

The practical significance of these conclusions is, on the other hand, that in the absence of characteristic physical findings or clinical symptoms of tuberculosis in the chests of children, the evidence of a positive diagnosis rests upon a history of household exposure, sensitiveness to the tuberculin test, and x-ray evidence of parenchymatous involvement.

In conclusion, I realize that the last word regarding tuberculosis in the child's chest has not been said. The work of these men, however, which I have used as a basis for this paper, has been so thorough and so convincing that I feel it deserves our most thoughtful consideration. As Doctor Rathbun, whom I have already quoted, says, it is only by an energetic carrying on of this work by a large group of men and women and by a pooling of our knowledge as we go along that we can hope to arrive at anything definite.

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DISCUSSION

WILLIAM M. HAPP, M.D. (523 West Sixth Street, Los Angeles).—Doctor Hayes has brought out some interesting points for discussion. One thing which should be kept in mind is the difference between the clinical as well as the pathological picture of pulmonary tuberculosis in infants and in older children. In the former the reaction is characteristically glandular.

The enlargement of the tracheobronchial glands is readily demonstrable by x-ray before calcification has taken place, even in young infants. It is important to have lateral as well as anteroposterior pictures to demonstrate this. Repeated x-rays are of more value than single examinations.

We have not found the primary focus to be a basal lesion. It may occur in any part of the lungs, and usually gives no localized physical signs. The reaction which takes place in the chest in children usually occurs in the glands draining the focus, in the hilum of the lung, or as an extension from the focus itself. Such types of tuberculosis are very common in children. The apical or adult type of reaction is seldom encountered before the tenth year.

Physical signs are usually slight, unless caseation or cavity exist. The chief diagnostic points are: the symptoms, fever, tuberculin test, and x-ray findings. Contrary to former belief, the prognosis in pulmonary tuberculosis in children, even in infants under one year, is relatively good.

Comparative clinical studies with repeated x-ray examinations, checked by careful pathological studies, should go far to clarify the subject of tuberculosis in children.

✱

LYDD B. DICKEY, M.D. (Stanford University Medical School, San Francisco).—It is well to call attention to the fact, as Doctor Hayes has done in this paper, that the physical signs in a child's chest are seldom in proportion to the amount of tuberculous disease if the latter is present in a tuberculous child. This is one of the most important facts to be remembered by medical men who are trying to detect early tuberculosis in childhood. The group of children classified as cases of "latent tuberculosis" by Opie should not be neglected, even though they show, after careful history and physical examination, no manifest disease. No program aiming to control tuberculosis in school children is complete without means for careful observation of this group. It is possible that these are the children that are building up the resistance of the race to tuberculosis, and the care they receive during the so-called latency of their disease probably largely determines their reaction to tuberculous infection and reinfection in adult life.

Although we know that the primary disease in children is usually parenchymal, we still feel that when symptoms are present they are often due to the extension of disease to the lymphatic system, especially to the hilar lymph nodes. The parenchymal disease, if primary, may be relatively benign. This helps to explain the large number of positive tuberculin reactors that never show symptoms or signs of disease, and these children make up a considerable percentage of the cases of "latent tuberculosis."

✱

DOCTOR HAYES (Closing).—I am particularly pleased to have Doctor Happ and Doctor Dickey discuss my paper because of the work they have done in this field. They have emphasized the fact that the clinical symptoms and physical signs are often wanting or, at best, are indefinite and misleading in the case of pulmonary tuberculosis in children. Consequently we have to rely largely upon our history, specific tests, and x-ray study in this work, frequently repeated observations being important.

In considering pulmonary tuberculosis in children I think we should keep clearly in mind the fact that there are two distinct types. First, there is the type that results from first infection. This may be only a small area. On the other hand, it may be widespread and diffuse. This is the type that is accompanied by involvement of the hilus glands. This type, particularly if the source of infection is cut off and the general environment of the child improved, is relatively benign and tends to clear up. This form we ordinarily regard as juvenile tuberculosis.

The other type of pulmonary tuberculosis in children is that which results from secondary infection. It tends to be localized, particularly in the upper part

of the lung, and is characterized by a tendency to progress. This is the adult type.

The juvenile type may occur in adults, but I think is less frequent than the adult type in children.

The differentiation between these two types can be made, for the most part, through relatively frequent x-ray observation of the course they pursue.

THE LURE OF MEDICAL HISTORY

HIPPOCRATIC MEDICINE*

PART I

By **LANGLEY PORTER, M. D.**
San Francisco

MODERN medicine prides itself on its efficiency and its continuing progress. Those who busy themselves in its activities believe that they can approach it only through the method of science. This method of science is a technique that calls for accurate observation; it calls also for precise recording of observations and for logical deductions from these records—and as well for the dispassionate application of these deductions to the solution of problems of life, death, and disease. The method of science is inevitably based on the philosophic conception that "order rules nature," and that this "order" can be traced by the endeavors of man. In our day we take that ruling order, so far as it concerns biology and the applications of biology in medicine, to be expressed in the theory of organic evolution. However, we must realize that the theory enunciated by Darwin and developed by his successors leaves much unexplained, and itself is subject to evolution's dictates.

Modern medicine has gone on from triumph to new triumph because it has been able to accept this hypothesis and to deal with man as a biological, evolving organism adapted to an environment. Today we think of the perfection of that adaptation as health, and deviation from it as disease. Without this informing idea, all the help of optics, chemistry, biochemistry and physics, the things which have continuously helped man to widen and deepen his medical knowledge, would have been futile.

MEDICINE OF ANCIENT GREECE

One of the miracles of history is that ancient Greece, 2500 years ago, should have been able to develop a medicine based on a study of nature; of cause and effect—a medicine that originated the method of science, even as we use it today; one which believed thoroughly in the healing power of nature—which admitted no influence of a supernatural kind, and eschewed miraculous cures, whether these were produced by medicine man, or priest, by charm, amulet or prayer.

For three centuries before Hippocrates—that is, beginning with Thales in 640 B. C., Greek scientists had been struggling to understand the ordered rule of nature in which they had so certain a faith. Thales himself, the first of the Greek thinkers known to us by name, and following him, Anaximander, Alkmaeon, Empedokles, Demokri-

tus, Pythagoras of Croton, and a score of other Ionians, had been arriving at the conception of a dynamic universe, a universe in flux; an infinity of actions and reactions, a cosmos in which matter was an exponent of ceaseless motion; a conception, in fact, not very different from that which our astronomers and physicists offer us today, when they urge on us the modern theories of spiral nebulae and of atoms made up of constellations of electrons, swarming about a central proton. This dynamic conception was not universally accepted, not even in Greece. Philosophers, among the most notable of them, Socrates, found the cold realities of observational science too forbidding, and sought solace in the abstractions and inspirations of metaphysics. After Socrates came Plato who, while a mathematician and philosopher of the highest order, developed in his academy a school that, in spite of Aristotle, proved in time to be detrimental to the progress of the biological sciences and of medicine.

THE IONIAN GREEKS

The mental, intellectual and spiritual qualities that create pioneers are just the qualities needed to develop scientific medical thinkers, and so it happened in Ionia. The arts, especially that art most essential to fighting, seafaring, adventuring people, the art of medicine, developed, becoming year by year more practical and more scientific, more based on a belief in the "rule of order in nature," more divorced from magic, astrology, and things supernatural.

And why was the Ionian Greek so dominantly an individualist and a rationalist? The answer is inherent in the history of the race. He had the same spirit of pioneering that animated the forefathers of the American West. He was a colonist, a sailor, a trader, a professional soldier; success in all of those walks which depend on daring, on courage, clear thinking, curiosity, independence of character, decision and skepticism in the face of conservatism. Added to these reasons was the paramount influence of geographical position. The Ionian colonies lay at the crossroad of the world's traffic: Egypt to the south, the Hittite empires to the east and, at the very gates, the islands and shores that were saturated with the culture of the Minoans of Crete, that island people who we now know dominated the Mediterranean world before our written history began. It was on this Minoan culture that the sure foundation of Greek civilization arose, and through the Greeks it became the basis of the European and Western culture of which we, today, are so proud.

IONIAN GREEK CONCEPT OF NATURE

These Greek Ionian philosophers had none of our modern instruments of precision, no telescopes or microscopes or stethoscopes; no physical or chemical methods, no x-rays, no photography. But by virtue of observation and comparison; with naked logic and clearly thought-out inference, they evolved a theory of the nature of the world and of man that was satisfying to the mind and which fitted in with all the known facts that had then been accumulated. This universe that

*Read before the San Francisco County Medical Society, January 14, 1930.

they visualized was thought to be composed of four elements: earth, air, fire, and water; for each of these there was a quality—dry, moist, hot, and cold. There was also the *pneuma*—a life-sustaining fluid, a form of air, permeating the universe, which these students called the macrocosm. The *pneuma* entered with the breath into the body of man which was, in contradistinction to the universal "macrocosm," the "microcosm." From the activities of the *pneuma* in the body there arose the innate heat—the "fire without flame or spark," as Aristotle put it—truly a marvelous preview of oxygen, its powers and activities.

The microcosm—man—was made up of the four elements and the four qualities. In him the elements and qualities were represented by the four humours: phlegm, blood, yellow bile, and black bile. A man was healthy when the four humours were in perfect balance: "perfect *krasis*," the Greek would say. When one humour was in excess there was a "*dyskrasia*," an overbalance, and disease was the result; a theory not so unlike the views we subscribe to today in our theories of acidosis and alkalosis.

When phlegm, thought to be a secretion of the pituitary body, appeared in excess in abscesses, in colds in the head, in tuberculosis, and in the discharge of sputum, it was taken to be evidence of nature's attempt to bring about a cure by getting rid of the excess humour. In the case of abscess formation, or of empyema, a state of affairs in which nature is making an unsuccessful attempt to rid the body of an oversupply of the humour phlegm, the surgeon must intervene, incise the part and so help the body arrive at a rebalance.

The Hippocratic physician held the theory of the four elements and the four humours to be valid. Although apparently he let these theories influence his practice no more than the modern man permits the quantum theory of atomic structure to interfere with his treatment of tuberculosis or of appendicitis.

To bring the humours back to proper proportion after *dyscrasia*, or unbalance, a process of *pepsis* was thought to be developed in the body. This was conceived as a sort of ripening or cooking that developed under the influence of the innate heat. The result was a restoration of *krasis* and an elimination of any excess. Brock notes that in reality the process was thought of as a kind of digestion of the environment by the organism. The only essential difference between health and ill health was that in health the organism mastered its environment with ease; while in ill health the mastery was difficult, and the organism became conscious of disease.

The vast majority of the acute diseases seen by Greek physicians were malarial and tended to terminate suddenly on a certain day of the illness; this termination was called the "*krisis*." Diseases of long duration tended to end by slow recession, lysis, or else by what the Greeks called *apostasis*, which is translated by W. H. S. Jones as *abscession*—a term that is self-explanatory.

The Greeks taught that no hard-and-fast line can be drawn between physiological and patho-

logical processes. The process of coction of the humours they likened to the digestion of food and the expression of excreta after meals.

It appears that the daily task of the Greek physician at the periods when Greek medicine was at its best, was carried on, on a basis of accurate clinical observation, accurate recording, logical deduction and reasonable application of the deductions to the solution of the problems of daily practice. It is for this reason that the modern physician, reading the works of Hippocrates or Galen, finds himself more in sympathy with the mental processes of these writers than he does when he attempts to fathom most medical writings that originated in the seventeenth and eighteenth centuries. This is in spite of the fact that the doctrine of the four humours and the practical teachings of the Greeks dominated medical ideas until the first two decades of the nineteenth century.

HOW GREEK MEDICAL LORE REACHED OTHER LANDS

The story of the transmission of Greek medicine through Alexandria, Rome, and the Greater Greece that flourished in Sicily and southern Italy—of its emasculation at the hands of Syrian, Arab, and European; Jew, and monk, infidel and Christian—is fascinating but voluminous. Equally so is the record of its renaissance after the fall of Constantinople when, through the gateway of Venice, good Greek medical manuscripts found their way into Italy.

The sack of Mayence in 1426 drove artisans skilled in the newly developed printers' craft south to Italy; and books, among them many Greek medical texts, began to flow from Italian presses. Students and readers caught the infection of the Greek spirit. Little by little the distorted, shadowy interpretations, codifications and emendations of the great Greek authors which the Arabs and the medieval schoolmen had passed down, lost their authority.

Not only in science did the Greeks develop. All the world knows how the minds of their gifted men were taken up with the interpretation and revelation of the secrets of nature; how number and proportion and form and change of form intrigued them, and how out of these ponderings and peerings grew the understanding of the laws of proportion, of beauty and of their application to architecture, to sculpture, to vase painting, to literature and philosophy and metaphysics. Unfortunately some of their greatest philosophers tried to solve the problems by applying metaphysical formulas in the field of the mundane, and in doing so they began the rot and ruin of science and of the art of medicine that was to prove almost fatal a thousand years later.

Not all Greeks belonged to the gifted classes; the man in the street and in the tavern, the little householder and the proletariat existed then as they exist today, and perhaps were less affected by the theories of the Greek intelligentsia than we are—and much less influenced by the better thought of their own time than the people of like station are today. For there were no widespread

school systems, none of the modern means for the diffusion of knowledge that exist in these times.

So it need not surprise us that, then as now, scientific medicine was not generally accepted. In the parlance of the present, it had to sell itself to those it would serve, and that, as we shall see, was reflected in its great anxiety to be able to prognose well. It did not sell itself universally, perhaps not even widely, for we find it related that, side by side with the medicine of Hippocrates and other great exponents, priest-led theurgic medicine flourished and was richly supported by invalids who flocked to the temples of the healing gods for cures. Also, just as there is today a vast trade in patent medicine and proprietaries, a vast support for cultists and traffickers in miraculous and supernatural cures, so there was then a dominating folk medicine which used the services of astrologers, of magicians and sorcerers that put its faith in amulets, charms and incantations.

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(Part II of this paper will be printed in the April issue.)

CLINICAL NOTES AND CASE REPORTS

A RARE SEQUEL TO GASTRO-ENTEROSTOMY*

REPORT OF CASE

By E. ERIC LARSON, M. D.
Woodland

THE first gastro-enteric anastomosis was made by Wolfier and Nicoladini in 1881. Since then there have been numerous modifications of technique designed to eliminate complications. At the present time the results of gastrojejunostomy are very satisfactory when the operations are done by surgeons of experience. The modern gastro-enterostomy is so performed that, in at least 90 per cent of these operations, complications do not arise.

We wish to emphasize an unusual complication which has been infrequently reported by both American and European surgeons.¹⁻¹⁴ Although rare, it always must be borne in mind when a patient, for whom a gastro-enterostomy has been done, is seen with evidence of an acute intra-abdominal catastrophe. Prompt operation will give complete relief; delay will be fatal.

REPORT OF CASE

Mr. J. E. G., forty-one, Portuguese, entered the Woodland Clinic on January 25, 1925, complaining of periodic abdominal distress of fifteen years duration, which was typical of duodenal ulcer.

For ten days before entry he complained of a rather severe recurrence of the same distress, but much more knife-like in character and constant after food. Alkalis had not been tried for relief. There had been no weight loss. Morphine had been given by his home physician for two or three days prior to entering the hospital.

Physical examination was negative except for: blood pressure 108 systolic, 60 diastolic; marked ten-

derness in the left epigastrium with no spasticity or rigidity, but with a defense tightening of the abdominal muscles on deep palpation. The urinalysis and blood Wassermann were negative. The blood count showed leukocytosis of 11,200, with 74 per cent polymorphonuclear leukocytes. Gastro-intestinal x-rays revealed a rather large duodenal ulcer.

On January 26, 1925, at operation, the stomach was found to be slightly distended and, on the anterior wall of the duodenum, was found the puckering scar of an old chronic calloused duodenal ulcer. On the posterior wall was found the crater of a rather large acute ulcer. The gall bladder was moderately distended, grayish white in appearance, but contained no stones. The appendix, showing evidence of much trouble in the past, was removed. A posterior, retrocolic, retroperistaltic, short-loop gastro-enterostomy was then done. The proximal jejunal loop was four or five inches in length. The mesocolon was carefully sutured by interrupted chromic sutures to the stomach wall above the gastro-enterostomy stoma. The abdomen was then closed in layers. The patient made an uninterrupted recovery and was dismissed from the hospital on February 12, 1925. On several visits to the clinic within the next three weeks he stated that he was perfectly well.

On March 8, 1925, forty-one days following the gastro-enterostomy, the patient returned to the clinic stating that he had been "poisoned" by his breakfast. Soon after eating he was seized by an excruciating pain in the epigastrium followed by copious vomiting which contained no blood. The pain and vomiting continued four hours when we saw him. At this time he was doubled up and screaming with pain, which recurred at short regular intervals.

On examination, the scar from the former incision seemed normal. There was noted a fullness in the upper left abdominal quadrant. On close inspection, it was seen that this fullness was getting larger rapidly, with the patient complaining of an oncoming cramp which grew progressively worse within the next minute until the pain became almost unbearable. With a stethoscope a gurgling was heard, following which the tumor mass disappeared and the pain ceased. There was no fever. The blood count revealed 8800 leukocytes, with 86 per cent polymorphonuclear leukocytes, and 13 per cent small monocytes. The urinalysis was negative.

A diagnosis of intestinal obstruction, incident to the gastro-enterostomy, was made. The patient's symptoms coincided with those of a similar case seen else-



Fig. 1.—Onset of migration of jejunum through opening left after gastro-entero-anastomosis.

* From the Department of Surgery, Woodland Clinic, Woodland.

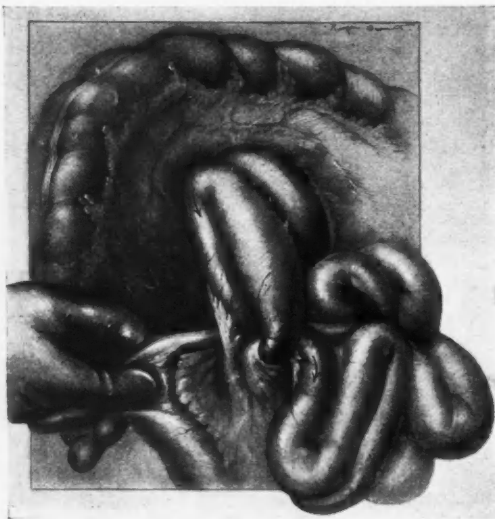


Fig. 2.—Internal hernia with complete intestinal obstruction caused by migration of jejunum through opening made between stomach, ligament of Treitz and jejunum.

where in which an acute intra-abdominal attack followed a Polya resection. In the latter instance, as proved at autopsy, there was a strangulation of the jejunum and ileum caused by the migration of the small intestine through the artificial aperture between the stomach, ligament of Treitz, and mesocolon. Because of the great similarity of the two cases, we made the same diagnosis on this patient and recommended immediate laparotomy.

At operation it was found that no adhesions existed between the former operative scar and the viscera. The mass in the left upper quadrant consisted of edematous loops of jejunum and ileum which had become strangulated following migration through the artificial aperture, always resultant upon gastro-enterostomy, the boundaries being the ligament of Treitz, the mesocolon, the stomach and the anastomosis. The loops were easily pulled back through the stoma and replaced in their normal position. No injury was done

to the anastomosis. Four interrupted chromic catgut sutures were then used to close the opening. The patient made an uneventful recovery and has remained well.

COMMENT

We feel that, by adding to the literature the record of this unusual complication, emphasis is placed on two important factors: first, prevention of such an occurrence; second, the fact that this complication should be constantly in mind when an acute intestinal obstruction occurs at any time following a gastro-enterostomy. In such a case delay for diagnostic procedures may result in alkalosis, hemorrhage, rupture of the suture line or edema, with death of portions of the intestines. Delay in reduction of the strangulation may entail a prolonged and serious operation in which the anastomosis must be torn down, the loops disengaged, and the anastomosis rebuilt.

1930 Wilshire Boulevard.

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THE SPECIFIC GRAVITY OF THE BLOOD

By JOHN MARTIN ASKEY, M. D.

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ALTHOUGH the specific gravity of the blood under varying conditions in the past has proved of little clinical value, it was used as an index to the hemoglobin percentage for years before the advent of the present methods. Tables were devised with corresponding values, which were inaccurate, however, due to failure to consider the effect of the color index.

Rogers¹ made use of it to determine the degree of blood concentration during the evacuation stage of cholera in the London epidemic of 1908 and the use of intravenous saline was predicated upon this factor. It was found that extreme dehydration raised the specific gravity to 1066 instead of a normal 1058 and indicated the necessity of intravenous saline. Recently Barbour and Hamilton² have reported a falling drop method for determining this factor and believe that it should be investigated again in various conditions.

Forty years ago, when venesection was common, actual weight of the blood was possible. The direct method, comparing the weight of the blood with an equal amount of distilled water, using the pycnometer, was feasible. This still



Fig. 3.—Repair of opening left after gastro-entero-anastomosis.

remains the most accurate, though obviously impractical.

Anemia, polycythemia, either true or relative, due to concentration by diarrhea, prolonged vomiting or sweating, the hydremic plethora following hemorrhage, should change the specific gravity.

Qualitative changes in plasma, such as the azotemia of nephritis and the hyperglycemia of diabetes presumably should alter it.

The present report includes the results of fifty determinations done upon whole blood by the Hammerschlag method.

TECHNIQUE

This method consists of suspending a drop of blood in a mixture of benzine and chloroform and carefully varying the concentration of each until the drop remains poised midway between the top and bottom. The specific gravity of that mixture, determined by the hydrometer, is then equivalent to that of the blood. Baumann³ checked this method by the actual weight of the blood by the pycnometer in a number of experiments on dogs and concluded that it was a method "clinically easily applied and yielded, both in health and disease, results that were uniform and reliable," although the results are proportionately slightly higher than pycnometer determinations.

BASIS FOR PRESENT REPORT

In the studies reported here, determinations were made on the blood of fifty people, nine of whom were apparently in good health and the others suffering from varying conditions. Particularly the effect of conditions producing concentration of the blood from anhydremia, such as vomiting and diarrhea, was observed. A number of severe anemias were included in the study. It was hoped to discover some relation whereby the blood count of patients truly anemic, but concentrated by dehydration, might be determined accurately.

A blood count of five million in an originally anemic patient who has been vomiting persistently is of no value as an accurate count.

Two erythrocytic counts were done on each patient with pipettes certified as correct by the

United States Bureau of Standards, and an average taken. The hemoglobin determinations were done with a Sahli hemoglobinometer. The specific gravity readings varied from 1030 in a patient who had pernicious anemia to 1064 in one with a generalized peritonitis who had been vomiting for twelve hours. The latter was obviously dehydrated with dry, wrinkled skin, the former showed the well-preserved physique seen often in pernicious anemia. Determinations were made on several normal individuals at varying times of the day and the same figure obtained, contrary to the idea that diurnal variations were appreciable.

In the group of individuals that were considered normal the results ranged from 1049 with a red count of 4.49 millions and 90 per cent hemoglobin, to 1058 with a red count of 4.8 millions and 90 per cent hemoglobin. In seven instances of pernicious anemia the results ranged from 1030 in a patient with 1.1 million red cells to 1036 in a patient with two million red cells. The remainder of the patients were of widely diverse conditions, including heat exhaustion, filariasis, diabetes with high blood sugar and nephritis with high blood urea.

In a patient with strangulated umbilical hernia who vomited for three days there was a red cell count of 6.2 million, 104 per cent hemoglobin and a specific gravity reading of 1061. Another with peritonitis after twelve hours vomiting had 6.9 million red cells and a reading of 1064 for specific gravity.

There apparently was a very definite relation between the specific gravity of the blood and the quantity of hemoglobin present. With the color index, one, a reading of 1030 corresponded approximately with a count of 1,000,000 and a rise in red cells of 500,000 was accompanied by a corresponding rise of three points in the specific gravity. It was possible to predict very closely the red cell count by the specific gravity reading save in severe secondary anemia with marked disturbance of the color index.

Copeman⁴ studied one patient who had a red cell count of 500,000 and a specific gravity reading of 1027. Blood serum specific gravity is approximately 1027. Those patients with a red

TABLE 1.—Ten Cases Showing Relation of Specific Gravity to Hemoglobin and Red Cell Count

Specific Gravity	Hemoglobin	Red Blood Cells	Color Index	Diagnosis
1. 1030	22	1,175,000	1.14	Pernicious anemia
2. 1030	24	1,180,000	1.1	Pernicious anemia
3. 1036	42	2,010,000	1.1	Pernicious anemia
4. 1045	71	3,600,000	.9	Secondary anemia
5. 1048.5	70	3,995,000	.9	Nephritis—blood urea 76
6. 1051	95	4,490,000	1.0	Normal
7. 1055	85	5,225,000	.8	Diabetes—blood sugar 190
8. 1057	95	5,650,000	.9	Arthritis deformans
9. 1060	104	6,170,000	.88	Asthmatic bronchitis
10. 1064	104	6,900,000	.9	Peritonitis—vomited for 12 hours

cell count higher than would be expected from the specific gravity reading were found to have a low color index. Conversely, those showing red cell counts lower than would be expected from the specific gravity reading were found to have a high color index. Thus, in one instance a specific gravity reading of 1030 was found in a patient with a red cell count of 730,000 and a hemoglobin of 25 per cent or a color index of 1.6. With a color index of 1 the red cell count here would be 1,168,000, which corresponds to the specific gravity reading of 1030.

Despite the variety of conditions studied, representing diabetes with high blood sugar, nephritis with nitrogen retention, and other metabolic disturbances, there were no significant variations in the specific gravity save those due to variation in the quantity of hemoglobin. Apparently the factor overshadowing all others in changes in specific gravity is the hemoglobin content, the constituents of the plasma exerting little influence.

CONCLUSION

The determination of the specific gravity of the blood is apparently of little practical clinical value and its addition to the ever-increasing list of laboratory procedures seems unnecessary.

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SURGICAL TREATMENT OF STAPHYLOCOCCUS MENINGITIS

REPORT OF CASE

By GEORGE H. SCIARONI, M. D.
Fresno

LM., Los Banos, June 24, 1929. White, single, schoolboy, sixteen years of age. Referred by Doctor Mott.

Family History.—Grandfather died of tuberculosis at about forty years of age. Otherwise, family history good.

Past History.—Patient was born in New York. Came to California at the age of eight years. Had whooping-cough at the age of five years; measles at the age of seven years. Had his tonsils removed in 1925. Was operated on for appendicitis in 1926 and at the same time had a right inguinal hernia repaired. In 1928 he had severe attack of scarlet fever and was sick about three weeks, but fully recovered, apparently without complications or sequela.

Present History.—About June 10, 1929, he developed a small carbuncle on the back of the neck on left side near hair line. After a few days it was incised and drained. Six days later he developed severe pain in hip and calf of left leg with some fever. The following day he was brought to Fresno and had x-rays taken of the hip and leg, with apparent negative find-

ings. However, the back was strapped with adhesive plaster with no apparent relief. On June 24 he was admitted to the Union Hospital, at which time patient had a temperature of 104 degrees. The same evening he developed definite symptoms of spinal meningitis, and the following day I was called to perform a spinal puncture.

Physical Examination.—On inspection I found his general appearance very characteristic. He was a well-nourished young man, about five feet six inches tall, and weighing about 130 pounds. Lying straight in bed on his back with head drawn backward; with flushed cheeks and an anxious expression. His shoulders were drawn upward and his neck and back muscles were rigid. His respiration was somewhat labored. Pulse was 106, good quality. Temperature was 102.6 degrees. His abdomen was distended with gas. Upon auscultation his heart and lungs were negative. His lower extremities were extended, rigid, with heels drawn upward from tonic contraction of gastrocnemius and soleus muscles, causing his toes to point almost in line with the legs. He complained of severe pains in hips and legs, especially on manipulation.

Treatment.—The spinal needle was inserted between the first and second lumbar vertebra, and after considerable difficulty in getting the fluid through the needle, was successful in removing fifty cubic centimeters of thick, yellowish pus. At the same time injected antimeningococcus serum. The patient was immediately relieved and remained so for about two hours, after which his condition returned as before. The culture and microscopic examination of pus revealed *Staphylococcus aureus* in pure culture. Six hours later another puncture was made and about twenty cubic centimeters of pus removed. This time the canal was washed with antistreptococcus serum. Upon getting the laboratory report of staphylococcus infection, I suggested operative measures in hopes of establishing a permanent drainage. On June 26 the condition was progressively getting worse. Respiration was labored and marked cyanosis present. The upper and lower extremities were completely paralyzed except his hands and fingers, in which he had slight voluntary movement. Three punctures were made in the twelve hours. The last puncture, the needle was left in the spine with hopes of draining the pus and keeping down pressure, but very little drainage was accomplished on account of pus drying in the lumen of the needle and stopping the flow. Three hours later the needle was removed.

Treatment Continued.—On June 27, after a series of consultations, an operation was performed under ethylene anesthetic. A laminectomy of the second lumbar vertebra was done. Upon opening meninges, a large amount of pus drained into incision. The condition of patient was very bad, so a rapid closing was necessary and a small rubber drainage tube, surrounded by gauze, was inserted. Oxygen and stimulants were given: adrenalin, strychnin, etc. His temperature at 12 o'clock noon was 105 degrees. At 1 p. m. he was taken to surgery, and about 2 p. m. his temperature was 107 degrees. By 3 p. m. it dropped to 104 and by 12 o'clock midnight it was 98.6 degrees. At 4 a. m. it again returned to 104.6 and thereafter it ranged from 99 to 103. Nothing of much interest developed for about ten days except that his breathing steadily improved. About the middle of the second week he was able to move his arms. After the third week he could use his legs somewhat, and from then on the paralytic condition improved daily. On August 7 (which was six weeks and two days from the time he entered the hospital) he was discharged from the hospital with still a slight drainage from the wound.

312 Pacific Southwest Building.

REFERENCE

- Emerson, Kendal: Boston M. and S. J., March 24, 1927.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects for discussion invited.

PELVIC INFLAMMATORY DISEASE

H. N. SHAW, LOS ANGELES.—Pelvic inflammatory disease is due to the following causes: in the order of their frequency, gonorrhea, puerperal infection and hematogenous infections, including tuberculosis.

Gonorrhea probably accounts for 95 per cent of cases of salpingitis, the chief damage being originally confined to the tubes. When the fibrinated extremity becomes closed off, and also the inner end, the pressure within the tube may cause it to rupture into and infect the ovary. This is the danger in this type of infection, and it is the reason that a hard and fast line cannot be drawn in regard to treatment. The infecting organism varies in virulence in different cases. An infection due to an organism which has lain hidden in the seminal vesicle, or prostate, for many years, will be very different from one which has come red hot from an organism picked from a street walker. In the latter case the germ has been passed from one contact to another at short intervals, and is extremely virulent.

Diagnosis from smears is exceedingly difficult. An individual may have germs concealed in the deep cervical glands, the inflammatory process may have closed the ducts of those glands, and smears made from the cervical discharge may be negative. This is the most dangerous type, as such an individual may squeeze out gonococci at the height of an orgasm, at the menstrual period when the cervix is much congested, or as the child's head passes through the birth canal in childbirth. The only smear from which a definite conclusion can be drawn is a positive one.

In acute salpingitis there is always pain, most often bilateral. Fever seldom goes over 103 degrees, and leucocyte count tends to be below 18,000.

Treatment of acute salpingitis should always be conservative. Surgery should not be considered until temperature and white count have been normal at least two weeks. There are exceptions to every rule. There are occasional cases where pus is present, and the temperature and leucocyte count remain elevated over long periods. We had a case in one of our wards for over five months without improvement which was finally operated upon. We found a left tubo-ovarian abscess that had ruptured into the lower sigmoid. The bowel tore across at the upper rectum and we had to make a permanent colostomy, closing off the lower end. This patient would have been much better treated had we operated three months before. Remember that 85 per cent of acute sal-

pingitis cases escape operative intervention. But, when you are convinced that a tube has been definitely sealed off do not hesitate to advise its removal, otherwise, it is like a sword hanging over the patient's head. A flareup of the process with further extension may damage the ovary. After the condition has become chronic, the question arises how much we should remove. If there is question of tubal patency, a Rubin test should be done, and a closed tube should be removed. The uterus should be removed or should not, depending on how smooth a surface can be left. If the uterus can be used to cover up a raw area, we advise leaving it. If, on the other hand, the surface of the uterus is raw, difficult to peritonealize, we advise its removal. If an ovary is badly infected, removal of the diseased tissue may seriously interfere with the veins leading from it. This means cystic ovary and another major operation within a few months. In these cases we have been trying ovarian transplants with very gratifying results in suitable cases. A piece of normal looking ovary, about two centimeters in diameter is chopped in small fragments and imbedded in the belly of the rectus muscle. Care is taken not to cause much bleeding. We expect to report results during the next year.

* * *

KARL L. SCHAUPP, SAN FRANCISCO.—By pelvic inflammatory disease we usually mean a gonorrheal salpingitis or salpingo-oophoritis, but we must also include other infections which involve the female pelvic organs.

Puerperal infection and infected abortions are the most dangerous to the life of the patient. The onset follows shortly after delivery or after instrumentation of the uterus. It is sudden, often beginning with a chill, followed by high temperature, rapid pulse and respirations. Pain in the lower abdomen and back are always present. The abdomen becomes spastic early and later may become distended.

This type of infection differs in its progress from the gonorrheal in that it follows the lymphatics rather than the mucous membrane of the uterus and fallopian tubes. These organs become involved, it is true, but by extensions through the uterine wall and broad ligaments. It is a metritis and parametritis rather than endometritis and salpingitis. This factor is important in the diagnosis and prognosis.

Where the condition primarily involves mucous membranes one usually finds rather clearly defined masses in the region of tubes and ovaries. The very slightly enlarged uterus can be felt and

may even be movable. There is marked tenderness on attempt to move the organs. With parametritis, infiltration of the lymphatics of the broad and sacro-uterine ligaments is profound, and causes the cervix, uterus and adjacent tissues to become so thickened and fixed that all that can be felt is often one large, fixed mass, brawny in consistency and giving the impression of having been poured from concrete. Discharge is usually scant and of a serosanguineous nature. The urethra is clean and cystitis does not often follow.

The blood picture is that of a profound infection, especially during the first few days. As the condition progresses a definite secondary anemia appears.

When the typical case is found one can predict that it will be of long duration, six weeks or longer, and the patient should be so advised. Unless there is diffuse peritonitis or septicemia, one of two things will probably happen; most often a gradual resolution of the inflammatory masses, with simultaneous improvement in the patient's general condition will take place, or at the end of weeks, localized abscesses may form, probably in the broad ligaments. Such abscesses usually contain much less pus than one would expect from the size of the mass of tissue involved.

The treatment demands patience for two reasons, the length of time necessary for either resolution or abscess formation to take place, and because early operative procedures merely tend to spread the process and endanger life. So much pelvic tissue is involved that it cannot all be removed. Bed rest is, of course, most important and should be rigidly enforced until the temperature has been normal for some time. Ice packs to the abdomen early in the condition are most grateful. Sedatives must be given, but here opiates are dangerous because of the length of time through which relief of pain is sought by means of drugs. Hot, prolonged vaginal douches seem to hasten favorable progress, but they must be very hot and must be given slowly under low pressure. At least two gallons should be used twice daily.

When abscess formation has taken place the treatment is surgical and a posterior colpotomy is sufficient. Laparotomy rarely becomes necessary, but when it does, except in unusual instances it should not be attempted for many months.

* * *

CLARENCE A. DEPUY, OAKLAND.—In a short discussion of pelvic inflammatory disease, I would like to lay stress on two points which I think are most important: first, diagnosis; second, treatment.

In a service at the Alameda County Hospital which has extended over several years, I have been most impressed with the large number of cases of this disease which have been sent in by physicians with a diagnosis of "acute appendicitis," and a request for immediate operation. It is my belief that if the history, symptoms, physical

findings and laboratory findings which are usually quite distinctive, are carefully investigated, a correct diagnosis should be made and this, of course, influences the treatment.

As regards treatment, I believe that this has been well standardized by the men doing gynecology throughout the country. It is palliative until the acute symptoms subside, and then surgical in certain types of cases, especially where there are large infected tubes and ovaries. It may be necessary in some acute cases to resort to culdesac drainage. The indications for this are well marked by the symptoms and physical findings, such as bulging in the culdesac, and it is remarkable the relief obtained.

It is still the practice among men doing general surgery to do extensive abdominal operations on patients who have high temperatures and all the symptoms of acute pelvic peritonitis, and, I believe, that if the results of this type of treatment are investigated, it will be found that the mortality is high and the postoperative period quite stormy.

It is extremely rare that a patient treated by palliative measures will die of pelvic inflammatory disease, and certainly their postoperative convalescence is much smoother when operated on after their acute symptoms subside, and abdominal drainage is not necessary.

* * *

EDWARD N. EWER, OAKLAND.—A patient with tubal infection almost always gives a history of previous attacks. As we evidently see the first attacks infrequently, it is probable that they are light in character and tend to recover with the rest made necessary by the pain experienced. With prolonged rest and heat applied to the lower abdomen by electric light baths most of these could be permanently cured, barring reinfection. Subsequent acute activations are thought by some authors to be reinfections from without or from gonococci still lurking in the original foci below the cervix. I have seen a first tubal infection follow at once upon the treatment of an acute gonorrhea with tampons, and Curtis believes that douching the vagina may force the organisms up through the cervix. Extension to the tubes occurs by way of the mucosa.

Pelvic pain, often bilateral, is present, temperature reaches 102 to 103 and the leucocyte count is seldom over 18,000. If there is much vomiting peritoneal reaction is suggested, and differentiation from appendicitis must be made. This is usually easy, for bimanual palpation elicits pain in the tube regions when the cervix is pressed upward, and if there have been previous attacks, masses may be felt on one or both sides.

In appendicitis the pain usually begins in the upper abdomen and finally localizes between the umbilicus and the anterior superior spine and there is more protective muscle tonus. The diagnosis between the two conditions is generally so

plain that there is seldom excuse for opening the abdomen in the presence of pus tubes.

Tubal pregnancy and ovarian cysts with twisted pedicles are diagnosed by the history and particularly by the fact that the blood sedimentation time is slow at the time the emergency demands attention, while in tubal inflammation it is around thirty-five minutes, or twenty or under if pus is present. Unless there is a large amount of pus these inflammations will recede after complete rest in bed, and tubes should rarely be removed till the sedimentation time has increased to sixty minutes. If it does not increase it is likely there is pus in the broad ligament cellular tissue or somewhere else and not in the tubes.

Two and one-half years' use of this test at Highland Hospital convinces us of its reliability, and the test is most easily made with the ordinary Linzenmeier tubes.

One patient with all the physical signs of acute pus tubes and a leucocyte count of 18,700 was operated upon with a tentative diagnosis of twisted ovarian cyst solely because the sedimentation time was eighty-five minutes. The condition found was hydrosalpinx twisted on the lax portion of the tube near the uterus. Acute tubal inflammation would have given a rapid sedimentation time and we would not have felt justified in operating.

When pus exudes from a tube and a pelvic peritonitis occurs a collection of pus may form in the culdesac. Rest then may not affect the rapid sedimentation time but there is no danger in delaying operation till the bulging vaginal vault proclaims the abscess. The same thing is true of the abscess of pelvic cellulitis. That condition is the result of extension of inflammation from an infected parturition wound in the cervix or upper vagina or from the wounds caused by curetting an infected incomplete abortion. These are lymphatic extensions through the parametrial tissues. If resolution goes on the sedimentation time increases. If it does not and pus forms the physical signs of abscess appear. These are mass formation and possibly fluctuation, felt on vaginal or recto-vaginal bimanual palpation. Incision behind the cervix evacuates the pus without danger.

The importance of blood sedimentation tests in pelvic inflammatory disease should be stressed. There are many articles on the subject in the medical literature of the last four years, and there is a particularly good one by Donald G. Tollefson giving technique and other information in the January 1930 number of *CALIFORNIA AND WESTERN MEDICINE*.

New Ills for Old.—One by one, in a world which has ostensibly been made safe for democracy, the textbook pictures of medicine are stepping out of their pages and coming to life. Curiously enough, our furred and feathered friends—and to some extent our scaly ones—are responsible for these new health hazards. Bovine tuberculosis we have long had in our midst, until now, at least in some communities, it is practically hailed as a friend. The tapeworms of fish

and beef and pork have long delighted us with their picturesque infestations and we have shuddered in amazement at our own recklessness as we reveled in our raw pork, knowing well the dangers we ran of converting ourselves into ant hills of trichinae. Rabies, once practically banished, is now the prerogative of every dog owner, and he does not hesitate to expose his friends and neighbors (a subtle distinction) to the pleasures of a fourteen or twenty-one day anti-rabic course of treatment. Tick fever does not yet concern us in the East; if it did every Mary would have a little lamb to follow her to school.

Malta fever, once considered the exclusive property of the goats which leap from precipice to precipice on the rocky fastnesses of Gibraltar, has invaded our Southwest, and very recently a wave of undulant (not indolent fever, which is an industrial hazard) has crossed the continent like a storm cloud and broken upon the Atlantic Coast. The rabbits of Georgia are propagating themselves northward with the rapidity which is a peculiarity of their species, carefully conserving the tularemia which is their choicest possession. We are in danger of becoming a tributary to the animal kingdom.

Within a week of this writing a new shadow has fallen upon the land, for psittacosis (see Osler, William) has been discovered among the parrots of New England, and already many owners, trainers, and dealers have fallen prey to human psittacosis, a disease characterized, according to the dictionary, by high fever and pulmonary disorders. An edict has gone out from headquarters that all sick parrots (i. e., those with high fever and pulmonary disorders) are to be quarantined, and it is rumored that the disease may become reportable. Already, it is said, the parrot market is being raided by pet lovers and the supply is in danger of becoming exhausted.

If shark bite became communicable it is doubtful if the makers of aquariums could keep up with the demand.—Editorial, *The New England Journal of Medicine*, January 23, 1930.

Thick Films for Diagnosis of Malaria.—The studies conducted by the United States Public Health Service relating to the prevention and eradication of malaria assume many interesting phases. A recent report of considerable interest issued by the service is that relating to a method of preparing and examining specimens of blood from a malaria patient on glass slides for the diagnosis of malaria.

Laboratory workers and others interested in the diagnosis of malaria have recognized the advantages of the thick film method, especially for malaria surveys. An assistant may be easily taught to collect good specimens and the method has been used widely and is successfully used in field work. Much time is saved in the examination of specimens. When the malaria parasites are at all numerous they are usually seen in the first thick film; when they are rare they are often detected in the thick film when they might have been missed in a thin film or found only after a long search. The chief purpose of the thick film is, of course, the diagnosis of malaria rather than the study of the characteristics of malaria parasites, a purpose for which the thin film is more suitable.

It is commonly recommended that fifteen to twenty minutes be devoted to a thin film before it is declared negative and five minutes to the thick film. In either case the time spent on apparently negative specimens must vary with the circumstances. When, for example, the sole purpose is to find a crescent carrier suitable for mosquito-infection experiments, a fraction of a minute will suffice for the thick film. In a clinical case it may be necessary to spend a good deal of time on a film; but here it is usually possible to get a new specimen taken at a time when parasites may appear in larger numbers.—*United States Public Health Service*, February 8, 1930.

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Leaflet Regarding Rules of Publication.—California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

EDITORIALS

TWO RECENT CALIFORNIA RESEARCHES— THE ASCHHEIM-ZONDEK PREGNANCY TEST AND THE COFFEY-HUMBER CANCER EXPERIMENTS

California Doing Its Part in Medical Research Work.—In the December 1929 issue of this journal, page 428, mention was made in this column of the excellent work which had been brought out by the Hooper Foundation of the University of California. If it is gratifying to know that the group studies of that Foundation are a credit to California, it is equally pleasing to know that here and there throughout our state, individual members of the medical profession are not lacking in capacity for keen analysis and constructive thinking, as they meet their day to day problems in medical practice. Two of such studies seem worthy of special mention at this time. Both are endocrine researches, and each opens up vistas of new fields of intriguing investigation, combined with possibilities of much usefulness in general practice and of benefit to humanity.

* * *

The Evans-Simpson Report on the Aschheim-Zondek Test for Pregnancy.—Among the special articles in this issue of CALIFORNIA AND WESTERN MEDICINE is an article on the "Aschheim-Zondek Test for Pregnancy—Its Present Status" by Doctors Evans and Simpson of the Anatomical Laboratory of the University of California. Their corroborative studies of the original work of

Zondek, Smith and Aschheim on the close relationship in the action and nature of the anterior lobe of the hypophysis in provoking sexual maturity in sexually undeveloped animals, and of certain substances which are existent in the blood and urine of human females during pregnancy are most interesting. The world has long desired a test which would give more accurate early knowledge of pregnancy than do the symptoms and signs listed in current volumes on obstetrics. Doctors Evans and Simpson present the technique of the test with explanatory comments on the reactions that are quite convincing; and summarize their viewpoints by stating that it is a very dependable test, that it may be looked upon as a positive test so early as the first few days after the first missed period, and that it is likewise useful in differential diagnosis and in the diagnosis of certain other uterine conditions.

* * *

University of California Offers Its Facilities to California Physicians Making These Tests.

Because it is necessary that laboratories which would properly do this test should have an adequate supply of sexually immature rats or mice constantly on hand, and have experience in interpreting the histology of the ovary, and until such time as one or more laboratories throughout the state are prepared to acquire this experience and have a supply of such animals at their disposal, the Anatomical Laboratory of the University of California at Berkeley will continue to extend its facilities for doing this test, to physicians in private practice. A charge of ten dollars is made for the studies and report in each case. The University authorities hope that the test will come into such general use that it will be possible for one or more private laboratories to take over the work. A perusal of the Evans-Simpson paper will no doubt lead many physicians in California to try this new test and to avail themselves of the facilities so kindly placed at the disposal of the medical profession by the state university.

* * *

The Coffey-Humber Report to the San Francisco Pathological Society.—When a month or so ago two members of the California Medical Association, Doctors Walter B. Coffey and John D. Humber of San Francisco—at the request of and in order, to give more detailed information to colleagues who knew of and who were interested in their studies, presented to the San Francisco County Pathological Society* a report on some cancer investigations which they had been carrying on for many years, they probably were as much surprised as were many other members of the California Medical Association, at the sensational publicity which was immediately given to their observations by the lay press. The publicity did not confine itself to local newspapers, but through the press agencies became almost overnight a subject of almost national comment in the public press.

* See letter in this issue of California and Western Medicine in correspondence column of the Miscellany Department, in which a digest of this report by Doctors Coffey and Humber to the San Francisco County Pathological Society and other letters are printed, page 210.

The Embarrassing Situation Which Arose.—It was an embarrassing and difficult situation which confronted these two colleagues. They had made their preliminary report, as do members of our profession here and everywhere, at the request of colleagues who were interested. They distinctly stated that they were only reporting some experiments and observations and much additional work would be necessary before sound conclusions could be drawn. Because of the public interest which at once became so manifest, they were called upon to decide whether it would be wiser to permit the representatives of the press to have access to the information which was demanded, or to assume a semi-secretive or clam-like attitude and refuse to let the newspapers have the news information which the press representatives insisted on having. It was evidently a situation in which halfway measures would probably lead to worse results than would a course of frankness, and the latter course was therefore decided up only after consultation with California and Eastern colleagues.

The entire experience exemplified how marvelously rapid has been the development of news dissemination through the daily press in the last few years, and what a powerful factor the newspapers can be in spreading information on public health topics in which the people at large have some knowledge and more or less interest.

* * *

Origin of the Publicity Campaign to Promote a Better Understanding of Cancer.—The receptivity of the lay public for more and better knowledge concerning cancer may be said to have had its foundation in the action in 1913, taken by the Congress of Surgeons of North America, when that body appointed a committee on publicity to spread a truer understanding of cancer among the medical profession and the lay public. Out of that action came the formation of the American Society for the Control of Cancer, and that and other organizations since that time have rendered more than yeoman service in a splendid educational campaign, in which many physicians have taken a prominent part, Dr. Joseph C. Bloodgood of Johns Hopkins University being particularly prominent.

* * *

Basic Efforts Against Cancer.—In the 1926 Lake Mohonk, N. Y. Conference of the American Society for the Control of Cancer, an international symposium was held on cancer control. In the volume (Cancer Control, Surgical Publishing Company, Chicago, 1927) which contains the reports of that gathering, it is stated on page 2:

"It appears that the direction in which efforts can most hopefully be employed to cope with the scourge of cancer is through education. Apparently there should be:

- (1) a widespread campaign to teach the public what everyone should know about cancer;
- (2) a dissemination among the practitioners of medicine of information that would help them in diagnosing and treating the cases which come to them;
- (3) adequate hospital provision for the care of curable and incurable cancer patients; and
- (4) continued research in the cause, prevention and cure of cancer."

Bloodgood's Outline of the First Publicity Efforts.—In a paper printed by Bloodgood of Johns Hopkins in *Health* in March, 1922, entitled "Publicity Necessary for the Cure of Cancer," he made mention of the initial action of the Congress of Surgeons of North America and stated:

"The chairman of the first committee, my colleague Cullen of Baltimore, with great foresight conceived the idea that a number of articles be published in lay magazines and that these articles be written by an experienced and able lay writer, based upon facts obtained from the surgeons of great clinics in this country. These articles were written by Samuel Hopkins Adams and published in the *Ladies' Home Journal*, *Collier's Weekly*, and *McClure's Magazine*. This was the first effort for publicity on cancer in the world, and although it is but nine years since it was launched, the evidence is conclusive as to the life-saving value of such publicity."

* * *

An Excellent Foreword by a Lay Editor.—A foreword by the editor of *Health* to the above article by Doctor Bloodgood may also be of interest as showing the viewpoint of a layman:

"Cancer is today the greatest mystery of the human body. In spite of the wonderful increase in our knowledge of human diseases, we know little more about it than our forefathers did. Some day, this mystery will be solved. There are probably, today, in the world, one thousand trained men and women who are giving their lives to study and experimentation, trying to find out what causes cancer and how it can be prevented. When these questions can be answered, it will be a great day for the human race. Until they are, we can only use the knowledge we have."

The excerpts just given should make quite understandable how it has come about that the lay public of the year 1930 has almost as much interest in all efforts to conquer cancer as has the medical profession, and why every seeming advance in the fight against cancer is read with avidity.

* * *

The Publicity Given to the Coffey-Humber Extract.—Of course it may be said that the publicity of Bloodgood and his colleagues was of a very different sort than the publicity which has been given by press representatives to the recent California studies which already are popularly known as the Coffey-Humber cancer experiments. So it has been, and on that account it may be worth the while to pause for a few moments to consider a few points before passing judgment.

Doctors Coffey and Humber made no claim of having discovered a cancer "cure." On the other hand, they invariably emphasized, in their several addresses before California medical organizations, that they had simply been carrying on certain experiments for many years in connection with their theory of malignant tissue growths; that they had succeeded in making an extract from the cortex of the suprarenal glands that had some interesting properties in relation to presumable action on the sympathetic nervous system, blood circulation and on malignant tissue; that they had not been able as yet to work out accurate or final dosage for their preparation; and that they needed a vastly greater amount of clinical material and observa-

tion before anything like final conclusions could be drawn concerning the efficacy of the extract or principle which they had isolated and which they were trying out in the treatment of cancerous tissue. Further, that they would refuse to accept patients on a fee basis; that they would give the treatment only to such patients who came with letters from their personal physicians; that they desired to have the remedy to pass through the regular course of scientific tests of all new preparations; that they did wish to continue their investigations, because the remedy did seem to have real merit in doing away with pain associated with cancerous new growths; and that they would be most happy if further experience would prove that the seeming selective action which the extract apparently had in dissolving or destroying cancerous tissue without seeming damage to normal cells should pave the way for a better method of treating cancer than at present existed.

* * *

Doctor Coffey's Friends Knew of These Studies.—A year or more ago, Doctor Coffey told the writer, as he probably told others of his friends, concerning the studies being made by Doctor Humber and himself. It seems only fair, therefore, inasmuch as with what might at this time be called, over-great laudation in some newspapers there has also come considerable criticism to Doctors Coffey and Humber, that it should be generally known to their California colleagues, that Doctors Coffey and Humber did not rush to the lay press with reports of their studies.

* * *

As the Situation Stands at Present.—All must concede that it would be a boon to humanity if their work would pave the way to new and better methods of treatment of cancer. But even if their studies should not bear such great fruit they will still have been participants in doing a real service in the attempts at conquest of this disease, through the great publicity which has been and will be given in medical and lay journals and in newspapers to a rediscussion of the entire cancer problem.

For be it remembered that publicity is what the leaders in the movement against cancer have felt was absolutely necessary. Publicity makes for interest, and interest makes for coöperation. When we become cancer-minded to the extent that we do not fear cancer; that we will use all present efficient methods in diagnosis and treatment; that we will carry on cancer researches with provision of ample financial backing from public funds and from the private purses of independently wealthy lay citizens—then we will also have the right to be so minded that we can feel assured that in the not remote future, cancer really will be conquered. Speed the day, and may these studies by our two California colleagues be important means to that end.

NARCOTIC PRESCRIPTIONS—CALIFORNIA NARCOTIC LAWS—FEDERAL NAR- COTIC ACT—PROPOSED PORTER NARCOTIC ACT

Violations of California Narcotic Laws Subject Violators to Arrest and Notoriety.—By order of the Council, a letter was recently mailed to every member of the California Medical Association. In that letter was stressed how important it is that all physicians should obey the state narcotic laws which were enacted in 1929 by the last California Legislature.

The special provisions of the amended California law (violation of which carries legal penalties) and which should be scrupulously observed by every physician who does not wish to jeopardize his good name and reputation through arrest and resultant newspaper publicity and notoriety, are those clauses which demand that every physician who gives a narcotic prescription must in his own handwriting, write with ink or with indelible pencil, the patient's name and address, the date of the prescription and his own signature. Other provisions make it illegal for either a physician or pharmacist to be parties to the dispensing on telephone orders, of prescriptions for narcotics.

The above are in the present provisions of the California law, and every physician licensed in California who fails to observe these statutes places himself in danger of arrest. If the statutes work improper hardships, then the attention of the officers and members of the California Medical Association should be called thereto, either through letters which could be printed in the correspondence column of CALIFORNIA AND WESTERN MEDICINE, or which could be sent direct to the central office of the Association.

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The Federal or Harrison Narcotic Act.—Practically all members of the medical profession have a personal acquaintanceship with the Harrison Narcotic Act, since every physician who wishes the right to prescribe narcotics is obliged to pay the annual federal narcotic tax to the Commissioner of Internal Revenue, and to comply with the other regulations in that law provided. When the Harrison act came into existence some years ago, it excited considerable criticism because of some of its provisions, but in the end the members of the medical profession throughout the country accepted the new federal law because its capacity for good in certain directions compensated somewhat for other inconveniences which were imposed.

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The Proposed Porter Narcotic Law—"H. R. 9054."—But now a new and additional federal regulation is proposed, not as a part and parcel of the Harrison act, but as a something else and separate. This new law has been introduced by Congressman Porter of Pennsylvania and is known under the title of "H. R. 9054." Members of all committees on public policy and legislation, representing California, Nevada or Utah county medical societies, should write to their local congressmen asking for copies of this bill, so that its

provisions may be studied, and reports thereon rendered to the respective county societies in order that appropriate action may be taken by the societies. Individual members of the California, Nevada and Utah Medical Associations who are interested should also feel free to write to their congressional representatives for copies of the proposed bill.

No matter how well meant this particular Porter act may be, it carries provisions which seem an infringement on the legitimate practice of medicine. It is another example of trying to do away with an intemperance evil or habit among certain classes of the lay population, through what seems little other than intemperate legislation. Like much of such intemperate legislation, it would, if enacted, probably fail to accomplish the perhaps laudable hopes of some of its enthusiastic proponents. It would, however, create a very considerable and unnecessary hardship to practicing physicians, and on that account would seem worthy of prompt and determined opposition from the medical profession.

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Proposed Porter Narcotic Law Jeopardizes Fundamental Professional Rights.—This proposed Porter act would obligate every licensed practitioner of the healing art, as well as members of the professions of dentistry, pharmacy and veterinary medicine, to secure from the United States Commissioner of Prohibition a separate license to dispense narcotics. The proposed bill has drastic provisions which would prevent any physician who had ever been convicted of ever so small a technical violation of a narcotic law of the United States or of a commonwealth from ever again receiving a license to prescribe narcotics! Such an ironbound provision, with other regulations which would centralize power in the hands of the Commissioner of Prohibition, indicate that this proposed Porter act, in addition to being obnoxious through duplication of narcotic licensure, could very easily jeopardize the professional reputations and livelihoods of a large number of physicians in the United States who unwittingly might violate some of the superlatively stringent provisions of the proposed law. No group of citizens desire an abatement of the narcotic evil more than do members of the medical profession. Because of the work which physicians are called upon to do in caring for seriously sick and injured persons, they must not infrequently prescribe narcotics. This regular and emergency function of members of the medical profession should not be surrounded by excessive red tape restrictions to be carried out under an autocratic lay commissioner or a bureaucratic board or subordinates.

* * *

Write to Your United States Senators and Congressman.—It would be a very salutary experience to the United States senators and congressmen representing the states of California, Nevada and Utah, if every member, or at least the majority of members of the state medical associations of those three states would take the brief time to write to their representatives

requesting copies of "Porter House Bill H. R. 9054 and H. R. 9053," and then, after perusal, to send in a strong letter of protest, if their provisions are as obnoxious as are here most briefly indicated.

For the convenience of members of the profession in the three states, the names of the federal senators and congressmen may be found in this issue, in the "Public Policy and Legislation" column of the Miscellany Department. If you wish to safeguard yourself against future trouble in these narcotic matters, take the trouble to write to each of the two senators from your state who represent you, and also to the congressmen from your district. Do this before you forget it. Then when the time comes to later on more vigorously oppose the Porter bill, the officers of the California, Nevada and Utah Medical Associations will be in position to render more effective service, because these congressional representatives at Washington will have been previously made aware of the interest of the entire medical profession in these matters, and will have had time to study the justice of the contentions of the medical profession and to act accordingly.

CONSTRUCTION AND MAINTENANCE COSTS IN THE NEW UNIT OF THE LOS ANGELES COUNTY GENERAL HOSPITAL—WHAT OF ULTIMATE RESULTS?

Last Month's Editorial Comments on the Los Angeles County Hospital.—In last month's issue of CALIFORNIA AND WESTERN MEDICINE the action of the Council of the California Medical Association in calling attention to certain policies of the Los Angeles County General Hospital was editorially presented.

Mention was made of the massive new building now in course of erection. It was stated that this new building

"... will cost some \$10,000,000. Perhaps \$12,000,000 will be nearer the total cost of this new unit."

* * *

Board of Supervisors Objecting to the Costs.—About one week after the above issue of CALIFORNIA AND WESTERN MEDICINE had been placed in the mails, the Los Angeles Times printed a leading article under the caption:

"Hospital Cost Out of Bounds—Construction Total Figures 50 Per Cent Overweight." Several sentences from that article are here quoted:

"... Two members of the Board of Supervisors emphatically declared they will insist that the cost of the completed building be held down to the original estimate of \$11,000,000.

"The hospital became the main topic of discussion at the Hall of Records yesterday when Supervisor Graves, chairman of the Building Committee of the board, issued a statement that indications are that the hospital will cost approximately \$16,000,000."

* * *

Views of American Medical Association President-Elect on Hospital Costs.—On the same day, February 18, the Los Angeles Examiner printed a news dispatch from Chicago bearing on hospital costs throughout the United States. An applica-

tion of some of the items in this latter news item could be made to what has just been quoted from the *Times*. The Chicago news dispatch included the following:

"Reduction in the cost of hospital treatment was the keynote of the opening address at the Congress of Medical Education of the American Medical Association here today. . . . Dr. William Gerry Morgan of Washington, president-elect of the American Medical Association, voiced this demand. . . . He criticized the huge sums spent in building magnificent edifices for hospitals, and luxurious equipment. Much of this money should be diverted to maintenance, he said."

* * *

What a Staff Member Writes.—On the same general subject is a letter received by the editor, from a fellow staff member of the Los Angeles County General Hospital, who wrote in commendation of the stand taken by the Council of the California Medical Association concerning the placing of county hospital patients in private hospitals, and who, among other thoughts, stated as follows:

" . . . I have always thought that such an institution as is being built (by the Los Angeles County Hospital) is going to be in great competition with private hospitals and private practice. . . . I have been on the staff for more than ten years, and while I do not in any way begrudge the 'indigent,' the 'pauper,' or the 'county charge' my professional services, I do object most strenuously to the county receiving money for their hospital care. . . . "

* * *

An Out-Patient Service Innovation—Protests Unavailing.—The writer of these lines in CALIFORNIA AND WESTERN MEDICINE happens to be a member of the Advisory Medical Board of the staff of the "Los Angeles General Hospital, Unit No. One" (Unit No. Two is the Osteopathic Unit) and in common with two other colleagues on that board, two years or so ago gave expression to his belief that some of the innovations in the proposed new building were of such nature that the county of Los Angeles would be put to much useless annual maintenance expense, and that the architects should not prepare plans along such lines.

The particular provision or innovation to which he and his two colleagues entered vigorous objection was that which provided that in this massive, monolithic steel-cement structure, out-patients were to be treated not on the ground floor in an adequate out-patient dispensary, but on all the different wings and floors, in almost immediate conjunction with in-patient services.

* * *

Such an Out-Patient Innovation Could Add Greatly to Maintenance Costs.—The immense elevator and other personnel cost, incident to carrying the increasing number of out-patients and relatives and friends to these different floors can be better understood when one keeps in mind the out-patient figures printed in last month's editorial, namely, 223,475 out-patient visits at the Los Angeles County Hospital, for the year ending June 30, 1929.

A large number of such ambulatory or such out-patients are accompanied by relatives or friends

all of whom would be obliged to go to the out-patient rooms in the different wings and on the different floors. Since most of the dispensary or out-patient clinics are held in the 8 to 10 a. m. hours, the heavy elevator traffic during such hours can be easily imagined. Furthermore, if the out-patient services increase as in the last five years it will become a serious question whether or not sufficient elevators could be installed to handle the enormous traffic.

The Los Angeles County Hospital out-patient service may be said to have been instituted so recently as the year 1925. During that year a total of 72,314 out-patient visits were registered. By contrast, for the year ending June 30, 1929, the total of 223,475 out-patient visits were registered. This is certainly an enormous increase for a brief period of five years. The question naturally arises as to whether this out-patient or dispensary service will continue to increase in such rapid manner and if so, what additional accommodations would be necessary; and could the accommodations which would be required be actually furnished under the system of handling these out-patients, which it is intended to put into operation.

It might be said that the dispensary hours could be made to cover a larger number of hours, but inasmuch as these out-patient services are largely manned by attending staff members who give gratuitous services to the indigent sick, and as these staff members must have their other hours of each day at their disposal in order to earn their livings in private practice, it would be evidently out of the question to have these clinics distributed through different hours, in order to take the morning peak loads off of the elevators.

Unfortunately (as the writer still sees it), he and his two colleagues on the Advisory Medical Board were outvoted, and provision for this experiment of so handling such an immense number of out-patients was incorporated into the plans which were drawn up by the architects and which were adopted by the Board of Supervisors. The writer and his two colleagues have never been able to make themselves believe that such an out-patient service plan as is above indicated would make for more efficient service to out- or to in-patients and are equally convinced that such a plan will add greatly to the maintenance and overhead costs, and would use money that could have been put to far better purpose.

Just how much this interesting experiment will amount to in initial construction costs and how much extra annual overhead it will necessitate is naturally hard to estimate. The writer has been tempted to believe that such a plan, when all extra employees and time lost in unnecessary questioning of nurses and employees by visiting relatives and friends are included, will lead to an increased annual maintenance charge that perhaps may be as high as fifty thousand dollars a year. Fifty thousand dollars is a high interest return on an endowment fund of one million dollars, and one million dollars is a very considerable amount of money, even though it is practically set aside as an endowment from the pockets of taxpayers. It

is well known that the tax-paying citizenship do not look with joy and approbation on annual expenditures of public funds, unless such funds are utilized in harmony with the best standards of economy and efficiency.

* * *

Should a Public Hospital for Indigents Excel All Private Hospitals?—It would seem that a public hospital for indigent citizens could become a menace or pernicious influence to private hospitals and to private medical practice, when such a public hospital excelled in type of construction and equipment, the great majority of private hospitals in the United States. The writer has found that a goodly number of colleagues who know the details of the Los Angeles situation, apparently concur in his viewpoint. The same thought is brought out in the quotation from the letter received from a staff member, as indicated in the excerpt already made.

It is to these private hospitals that private citizens who are pay patients must go. With the present hue and cry concerning excessive hospital costs, would it not be natural for such private patients who do not belong to the indigent or pauper class, to feel that they should not be taxed to maintain institutional care for indigents, not only as good but actually superior to that which they themselves could have, and then only at heavy financial costs and stress?

* * *

What Influence Will This Hospital Have on Private Hospitals and Private Medical Practice? If in the Los Angeles County Hospital, the state of California is to have the largest hospital in the world—so far as construction dimensions are concerned, it would seem fitting that a serious attempt should be made to have it become at the same time, an institution where maintenance charges would represent a very maximum of efficient end results for the funds which are to be provided by the taxpayers.

In last month's editorial comments, a quotation was made from the last annual report of the Los Angeles County Hospital in which it was stated: "During the present year its per capita cost per day for in-patients was \$5.272 and per out-patient visit, \$1.235."

The question naturally arises as to whether the per capita cost per day when the new building is completed, will be materially decreased or increased.

Ten million dollars for a single division of one public county hospital, a few years ago, would have been looked upon as an appalling figure. If the totals exceed that sum, to become a possible twelve to sixteen million dollars for the addition of some fifteen hundred additional beds to the institution, and if the annual maintenance charges, because of peculiarities of construction and of arrangements or methods, will run into figures considerably above the costs of private hospitals, then it may be questioned, perhaps, whether something less massive and grand might not have served the indigent sick and injured of Los Angeles County to as good or to better advantage.

And if the massive building should become a visual invitation to lay citizens to contemplate the

presumable advantages of so-called state medicine, the members of the medical profession, not only of Los Angeles County, but of California and other states in the Union, will have something to think about.

We must all agree that it will be most interesting to note the different influences and effects which this large public hospital, now in course of construction for the care of indigent citizens of Los Angeles County, will have on the lay public, and on private medical practice, both in and beyond the geographical domain of that county.

Bar Association Approves Psychiatric Study of Criminals.—The American Bar Association went on record in its last annual meeting at Memphis, Tenn., approving the scientific treatment of criminals as a basis for law enforcement, the employment of experts on mental disorders by criminal and juvenile courts, penal and correctional institutions, and the filing of psychiatric reports in felony cases.

This action was based on a report of the Section on Criminal Law and Criminology headed by Dean Justin Miller of the University of Southern California Law School, which the association adopted by a majority vote. The section has been cooperating for the past two years with committees of the American Medical Association, the American Psychiatric Association, and the Social Science Research Council in a comprehensive study of the relationships of medicine and law, with special attention to the psychiatric aspects of medico-legal problems arising from mental disorders.

The association's committee on psychiatric jurisprudence, upon whose studies Dean Miller's report was based, he said, was not prepared to report upon its study of criminal law procedures involving insanity problems arising in the actual trial of the criminal case. These problems he pointed out are peculiarly difficult and will require further intensive study. The present report, therefore, confined itself to those problems which are represented after the verdict or plea of guilty. The following resolutions were adopted by the association:

I. Resolved: That the American Bar Association go on record as stating the following matters to be desirable:

1. That there be available to every criminal and juvenile court a psychiatric service to assist the court in the disposition of offenders.

2. That no criminal be sentenced for any felony in any case in which the judge has any discretion as to the sentence until there be filed as a part of the record a psychiatric report.

3. That there be a psychiatric service available to every penal and correctional institution.

4. That there be a psychiatric report on every prisoner convicted of a felony before he is released.

5. That there be established in each state a complete system of administrative transfer and parole, and that there be no decision for or against any parole or any transfer from one institution to another, without a psychiatric report.

II. Resolved by the American Bar Association that the various state and local associations be requested to give consideration to the recommendations in Resolution "I," as a part of their programs during the coming year, and for this purpose to secure the co-operation of their respective state and local medical associations.

III. Resolved that the Committee on Psychiatric Jurisprudence be continued for further study of this field, in co-operation with committees for the American Psychiatric Association and the American Medical Association and that it be empowered to adopt such means as in its judgment are best suited to effectuate the purpose of these resolutions.—*Mental Hygiene Bulletin.*

MEDICINE TODAY

Current comment on medical progress, discussion of selected topics from recent books or periodic literature, by contributing members. Every member of the California Medical Association is invited to submit discussion suitable for publication in this department. No discussion should be over five hundred words in length.

Medicine

Neurocirculatory Asthenia.—With the passing of the World War, there passed from the literature reference to a confusing clinical syndrome, neurocirculatory asthenia. First referred to by Da Costa during the Civil War, it was later recognized by others. During the past war it was also much spoken of. Lewis stated that of about seventy thousand soldiers returned to British hospitals for cardiac insufficiency, approximately 10 per cent had structural heart disease. Though fashionable in the war-time literature only, this condition is important at all times, being not solely a soldiers' ailment. Present in the civil population also, male and female, its great importance lies, not in itself, but in that it gives a peculiar picture, the main symptomatology of which is cardiac, and so leads to erroneous cardiac diagnoses. The type of patient concerned is one, usually, to which such a diagnosis spells disaster—the depressed, blue, melancholic, introspective type.

The condition is variously named neurocirculatory asthenia, from the generally apparent pathology; irritable heart, from the most pronounced symptoms; and effort syndrome, from the immediate, in contradistinction to the ultimate, etiology. Present in the second and third decades, occasionally in the fourth, with no particular predominance in male or female, it is common in the tall, thin, visceroptotic type, those who have cold hands and feet, those who perspire readily, flush and pale noticeably, have attacks of dizziness, palpitation, and even apparent dyspnea, this latter usually taking the form of sighing. They tire easily, complain often of precordial and other vague pains of variable nature and shifting distribution, and of insomnia. They are often introspective and depressed. Gastro-intestinal disturbances occur, usually constipation, atonic or spastic, an easily upset stomach with nausea, and, less commonly, vomiting. The temperature is often erratic.

Physical examination shows little; perhaps palpitation and a slightly increased temperature. The general impression is that of the type of constitutional inferior. Laboratory work may be negative; slight anemia is not infrequent. The blood pressure may be low, but is usually normal. There being all grades of severity of the disturbance, the symptoms must also vary.

Many do not present the typical physical picture or symptomatology because of a difference in etiology. In the typical case the etiology is probably endocrine. Focal infection is, however, not an uncommon etiologic factor. In such cases, we see, not the typical picture presented above,

but only the disturbances which brought the condition to attention, the palpitation, with perhaps atypical precordial pains, and easy fatigue. There may more frequently in this type be secondary anemia and pallor, but not flushing. Another etiology becoming more frequent daily is that of industrial poisoning, perhaps most commonly benzene, lead, and carbon monoxid. Lack of recreation is also a factor.

Many consider this condition to be the incipient stage of exophthalmic goiter, and, while the resemblance is striking, the proof is lacking. Of course, in the non-endocrine cases this is not to be considered. However, in differential diagnosis one should always rule out exophthalmic goiter and tuberculosis.

Therapeutically, little can be said in regard to the typical case, the constitutional inferior, although the following may be tried, often with benefit: the judicious use of sedatives and stimulants; the care of anemia, if present; cold baths, salt rubs, the cold affusion, physical therapy, exercise, the use of abdominal supports where indicated, proper selection of occupation and avocation, general hygiene, endocrine therapy, and even psychotherapy. Focal infections should be eliminated. In cases due to industrial poisoning, and in those due to lack of recreation, the remedies are obvious.

But, remembering the mental condition of the patient, the avoidance of an erroneous diagnosis of cardiac disease is most important. This may require extensive observation, but it should usually be possible to make a decision more or less immediately. The past history is important. The cardiac examination is usually negative except for palpitation; and during the time of life that the effort syndrome appears, the cardiac disturbances such as angina pectoris, coronary thrombosis, etc., which show an apparently normal heart on physical examination, are quite uncommon.

In any case presenting cardiac symptoms the effort syndrome should be kept in mind.

LOUIS BALTIMORE, Los Angeles.

Medicine

Treatment of Anaerobic Toxemia in Bowel Obstruction and Peritonitis.—In the discussion of toxemia resulting from organic bowel obstruction or peritonitis, the early diagnosis and early surgical intervention must always be stressed. As long as the patient fails to call a physician early or is treated by a physician who does not recognize the early symptoms indicative of the above conditions, late intervention will continue to result in a mortality of 25 to 50 per cent.

We must be ever searching for any procedure or therapeutic agent which will help to lower this mortality.

B. welchii and many other anaerobes are present in the lower ileum. Dudgeon cultivated *B. welchii* from the stools of 35 per cent of 200 ward patients; Williams cultivated *B. welchii* from the vomitus of eleven out of nineteen cases of bowel obstruction; nineteen out of twenty advanced cases, and no cultures from three cases of pyloric obstruction. *B. welchii* toxemia from the vomitus inoculated into thirty-two mice produced lethal effects in twenty-one. In sixteen controlled mice protected by antitoxin, no deaths occurred from inoculation. Davis and Stone proved that succus entericus did not produce toxemic symptoms when injected intravenously into animals, but when the juice was permitted to stand and bacteria proliferated, it rapidly became toxic. Bernheim and Whipple, Cannon, Dragstedt and Dragstedt were able to show that bacteria in the lumen is necessary for the production of toxic substances.

A great deal of experimental evidence by many workers has associated the toxemia with the presence of *B. welchii* and *B. vibrio septique*, *B. edematus*, and other pathogenic anaerobes. At present I believe that the practicing surgeon must accept this view.

Bower and Clark concluded that gas gangrene antitoxin must be given favorable consideration as a therapeutic agent of probable value in the toxemia of acute intestinal obstructions and of peritonitis.

Williams reports reduction in mortality in appendicitis from 6.3 to 1.17 per cent, and in bowel obstruction from 24.8 to 9.3 per cent. Michel treated suppurative appendicitis with peritonitis with polyvalent serum with similar results. Michel gives Delbet the credit for first using serum.

Under no condition is the use of polyvalent anaerobic antitoxin to be substituted for the rational surgical treatment. The obstruction must be dealt with surgically, enterostomies performed, if, in the opinion of the surgeon, they are necessary. Chlorid deficiency must be supplied by normal salt solution subcutaneously and two per cent salt solution intravenously. Sedatives are indicated for rest, stomach tube for drainage of upper intestinal tract, spinal anesthesia for the relief of distention, and the promotion of peristalsis must always be thought of particularly in ileus. Blood transfusion is unmistakably of value. If there is infection of the operative wound with anaerobic bacteria, then this wound must be debrided, drained, wound irrigated with Dakin's solution or a mild acid solution. Free chlorin and weak acids destroy the toxin of anaerobic bacteria.

Patients are desensitized by use of a small quantity of tetanus antitoxin or diphtheria antitoxin. One hundred cubic centimeters of polyvalent anaerobic antitoxin with 100 cubic centimeters of five per cent glucose is given intravenously, 100 cubic centimeters of serum is injected intramuscularly, intrafascially and intracellularly around the wound. At the end of twelve hours, 100 cubic centimeters is again given intravenously.

The patient receiving the antitoxin becomes less restless, the pulse rate diminishes, temperature and distention are reduced and the jaundice, if present, is lessened. It is our hope that patients suffering from toxemia, due to bowel obstruction or peritonitis, will receive anaerobic antitoxin.

EDMUND BUTLER,
San Francisco.

Medicine

Increasing Weight in the Nondiabetic by Means of Insulin.—The specific effect of insulin upon the diabetic individual is accompanied by a marked nutritional and general improvement. Stimulated by this observation, investigations followed in cases of a glycosuric nutritional impairment, and beneficial results were obtained. Cachexias, malignancies, tuberculosis, anemias, vomiting of pregnancy, Graves' disease, etc., were, consequently, treated with insulin.

The response to the administration of insulin is an expression of its specific influence upon the complicated metabolic mechanism of the body. And in cases of impaired nutrition, when the intermediary metabolism—the cellular behavior—is undoubtedly altered but gross pathology is strikingly absent, as in anemia and chlorosis, the cellular and general metabolism is affected and happily influenced.

Our modern age, characterized by its haste and nutritional indiscretions, tends to promote metabolic disturbances by this faulty hygiene; and the anemic and chlorotic patient is common, more especially in the large industrial centers. In these patients insulin administration has given excellent results.

Indications.—Anemic or chlorotic younger patients, mostly women, with an obvious malnutrition sponsored by pernicious food habits, constitute the majority I have so treated. Occasionally are seen patients with constitutional asthenia, with a generalized, perhaps slight, enteroptosis; or with latent tuberculosis; or with mild thyrotoxic symptoms—even in cases of beginning Graves' disease—and not too far progressed active tuberculosis, with greatly reduced desire for food intake and with steady loss of weight. Yet, despite the varying pathology, the results obtained by treatment with insulin are equally satisfying. The nutrition of these patients improved, anorexia disappeared, and a sense of well-being naturally followed.

Method of Administration.—To test the sensitivity of the patient, the initial dosage should be small, approximately five units. No severe hypoglycemic reactions will thus occur. Insulin is given twice daily, one-half hour before mealtime. Every three to five days, the dosage may be increased to ten, twenty, thirty, and even fifty units. The alert individual may be taught self-administration. A special diet is unnecessary. It is well, however, to include a minimum of fifty grams of carbohydrates in each meal, raising it according to the amount of units administered, a task easily accomplished in the ordinary menu.

Reactions.—Every patient should be taught the possibility of hypoglycemic reactions, their pre-

vention, and treatment. The feeling of weakness that first occurs is soon followed by nervousness, dizziness, perspiration of the forehead, marked hunger, and the sense of impending collapse. To guard against hypoglycemic reactions, patients are advised to carry sweets, candy or sugar, on their person. By taking sweets fifteen minutes after injection, and upon the slightest feeling of weakness, a reaction will be avoided. With the administration of rather large doses, reaction may occur repeatedly after several hours.

Effects.—During the first few days of treatment, no great alteration in appetite may be noted: improvement soon occurs, however, and patients with habitual anorexia consume an increased quantity of food with avidity and pleasure. After one week, several meals three or four hours apart are taken and food is often eaten between meals. The increased appetite and food intake is followed by a gain in weight of approximately two to three pounds weekly. Eating becomes a pleasure and a sense of well-being results. And in those patients previously addicted to laxatives regular defecation replaces a chronic constipation. The increase in weight does not, however, continue *ad infinitum*: for, after three to six weeks of treatment, using fairly large quantities of insulin, the body becomes refractory, and even greater quantities of insulin have no further effect. The increased weight is maintained for six to twelve months after completion of treatment, or even longer. In hyperthyroid cases the action of insulin, derived from the pancreas, can readily be explained, since the pancreas is an antagonist in action to the thyroid gland.

Failures.—The efficacy of insulin therapy is more dependent upon the susceptibility and response of the patient than upon the quantity administered. From the vast clinical experience of M. Levai about 20 per cent of cases treated as described failed to react successfully. With patience, rest and diet, seemingly refractory cases can be influenced.

Summary.—Insulin therapy is of distinct value in the malnutrition of the nondiabetic individual, whatever the causative factor may be. If the patient is properly instructed, and this advice is followed, ill effects do not occur. The treatment must certainly be individualized. And a gain in weight of two to three pounds weekly for approximately four weeks will result.

FREDERIC WAITZFELDER,
Los Angeles.

Ear, Nose and Throat

New Theories About Common Colds.—All attempts to find a specific microorganism of common colds have met, in spite of many claims to the contrary, with failure. Newman, in an extensive bacteriologic study, has found the total number of bacterial species in colds equal to nineteen, with none of them as a specific cause. Krause demonstrated in 1914 that not only bacteria but their filtrable virus is able to produce coryza. Foster repeated and confirmed the experiments of Krause. Dochez demonstrated the

same fact on apes. These observations prove that the presence of bacteria is not a necessary factor in exciting nasal colds.

As to chilling as a cause of colds, Schade in 1919 analyzed extensive statistical material of the German army during the last war, and found that the incidence of acute respiratory diseases was four times as great among troops exposed to unfavorable weather as among the sheltered. Mudd and Grant in 1921 published their experimental observations on students with chilling of the body by electric fans, as a result of which colds in the nose and throat developed. At the same time the authors noticed that, as a result of vasoconstriction, blanching and ischemia occurred on the mucous membranes of the pharynx, accompanied by a fall of temperature thereon equal to 1.42 degrees. A few other authors (Tschalussow, Cocks, Galeotti and Jackson) made similar observations.

These experiments compel us to replace the former false assumption of congestion of the mucous membranes, due to chilling and cold, with a new conception of a stage of blanching and ischemia of same. Mudd and Grant advance a hypothesis that ischemia may play a part in inducing infection by decreasing cell respiration, by retarding removal of products of cell metabolism, by increasing or decreasing the local supply of specific antibodies, by altering the state of aggregation of the colloids of the protoplasm, or a combination of the above factors, so as to disturb the equilibrium between host and parasite and to excite infection.

The new fact that an acute nasal cold can be produced by a filtrable virus of Krause and Foster, can be explained best by the anaphylactic theory of infection.

Immunity and infection, according to this theory, rest in the ability of tissue cells to combat through their proteolytic enzymes the invasion of both bacterial and nonspecific proteins. These enter as a result of parenteral ingestion through nonresisting mucous membranes. The degree of immunity depends upon the affinity which the body cells have for protein and the ability of the amboceptors to select and appropriate from the complex protein molecule, through cleavage, that stage of aminoacid which is not only harmless, but made useful by the tissue cells themselves. Incomplete cleavage or digestion of the protein molecule sets free toxic products which result in tissue irritation and disease.

Among factors predisposing to colds, presence of nasal or pharyngeal pathology plays an important part. Persons with definite pathological conditions of the nose and pharynx are inclined to infection more often than normal individuals, because their tissue cells are less active and lack protective arrangements due to chronic inflammation. The hypertrophic condition usually associated with chronic inflammation, exposes a larger field to the action of foreign protein, thus making them always more susceptible to anaphylactic shock in the form of coryza or pharyngeal cold.

BENJAMIN KATZ, Los Angeles.

STATE MEDICAL ASSOCIATIONS

CALIFORNIA MEDICAL ASSOCIATION *

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OFFICIAL NOTICES

Results of Nonpayment of Dues.—Membership in the California Medical Association, by reason of nonpayment of dues, ceases on April 1 of any year and all privileges of membership, including receipt of *CALIFORNIA AND WESTERN MEDICINE*, also cease. The names of such delinquent members are removed from the April mailing list.

This notice is intended to remind all members who have not yet received the 1930 card of membership in the California Medical Association that their dues have either not been paid to the county secretary or not reported to the state office. It should incite such members to an investigation of the reason why no membership card has been received. Otherwise the April and subsequent numbers of *CALIFORNIA AND WESTERN MEDICINE* will be missing. As this office orders only a limited excess number of copies each month, missing journals can seldom be replaced.

Be sure you hold a 1930 card of membership. If not, telephone your county secretary, and pay your 1930 dues before the first day of April.

Concerning Care of Out-Patients in Dispensaries.—The following resolutions were passed by the Council of the California Medical Association at its meeting of January 18, 1930 to cover certain underlying principles in the care of indigent sick and injured citizens of California:

RESOLVED, By the Council of the California Medical Association that, in its opinion, public hospitals of California supported by taxation should not maintain certain institutional activities in the care of the indigent sick when such activities might ultimately lead to ill results to the public health and to medical science standards; and be it further

RESOLVED, That in the viewpoint of the Council of the California Medical Association, when public hospitals, such as county hospitals, maintain out-patient or dispensary departments, and charge admission or treatment fees of such patients, that then such out-patient departments of public hospitals could, and in nearly all instances should, very properly refer all outpatients, with the exception of indigent patients who can pay nothing, and of other special classes listed below, to other out-patient dispensaries or institutions of good reputation in the same communities, when such exist. The exceptions are: (1) ambulant patients who have been in-patients, on whom it is desirable to have a follow-up supervision; (2) out-patients suffering from conditions liable to shortly make them possible in-patients.

In the opinion of the Council of the California Medical Association, the California law intends county

hospitals to supply professional services and hospitalization only to the indigent sick and injured, and county hospitals existing under the general California law should observe this fundamental rule and law.

COMPONENT COUNTY SOCIETIES ALAMEDA COUNTY

The Alameda County Medical Association was fortunate indeed in having as their guest speaker on the evening of January 8, Dr. Morris Fishbein, editor of *The Journal of the American Medical Association*, who spoke on "Fads and Quackery."

The regular meeting of the month was held in Hunter Hall on January 20, being called to order by President Meads at 8:20 p. m. The program of the evening was presented by the staff of Fabiola Hospital and consisted of four interesting papers. The first was by Dr. Don D. Weaver, who talked on the "Treatment of Surgical Shock." Doctor Weaver had made a survey of the treatment used in most of the large institutions in the United States, the majority of whom agreed that the treatment should be directed against such outstanding symptoms as loss of body heat, relief of pain, alterations in blood pressure, etc. Patients should be kept warm, pain and restlessness should be relieved by morphin. Drug stimulants are of very little value, the best supporting measures being the intravenous administration of glucose solutions or of solution of gum acacia or, best of all, transfusions with whole blood. It seemed to be the consensus of opinion of all authorities on this subject that there is no substitute for whole blood in the treatment of surgical shock.

The second paper of the evening was by Dr. T. C. Lawson on "Cancer of the Cervical Glands." The doctor outlined the various types of tumors which may be found in this region, but limited his discussion to metastatic growth from primary tumors of epithelial origin. He reviewed the anatomy of the lymphatic system and discussed the glands most frequently involved, pointing out the common sites of primary tumors of the skin and mucous membranes of the head. In the treatment of the condition, Doctor Lawson urged early, wide, and extensive dissection of the lymphatics.

Doctor Holcomb spoke on "Rotary Lateral Curvature of the Spine," showing slides of patients suffering with the condition, together with various methods of mechanical treatment.

Dr. O. R. Etter was the last speaker of the evening, taking as his subject the "Diagnosis of Chronic Gall-Bladder Disease." The doctor felt that the two most important aids in determining pathology of the gall bladder were a proper history and physical examination. Various laboratory procedures were, to his mind, secondary.

Dr. O. D. Hamlin spoke at some length on the cost of medical care and outlined some of the work of the California Medical Association in an attempt to offer solutions of the question "How shall the doctor be paid in these cases?" Doctor Hamlin called attention to the *Survey-Graphic* of January 1930, in which there are a number of articles by both lay writers and physicians on this subject.

The meeting was adjourned out of respect to the memories of Doctors Herbert DeLoss, Ward M. Beckwith, and Frederick W. Browning.

GERTRUDE MOORE, Secretary.

* For a complete list of general officers, of standing committees, of section officers, and of executive officers of the component county societies, see index reference on the front cover, under Miscellany.

CONTRA COSTA COUNTY

The Contra Costa County Medical Society held its regular meeting on February 11 in the Chamber of Commerce rooms, Richmond, with President J. W. Bumgarner in the chair.

The minutes of the previous meeting were read and adopted. Dr. J. M. McCullough gave a report on his attendance at the Contra Costa County Health Association meeting, stating that Dr. I. O. Church, county health physician, was investigating the incidence and origin of tuberculous cases in the county during the past year.

The scientific program was presented by members of the society from Richmond. It consisted in a symposium on respiratory diseases, and was as follows:

Dr. E. R. Guinan read a paper on "Asthma in Children," stressing the important part played by idiosyncrasies of food in these cases.

Dr. W. E. Cunningham presented a paper on "Common Colds." It was pointed out that treatment of this condition had changed very little in modern times and that no specific therapy was found efficient except in a very limited number of cases.

Dr. J. F. Feldman spoke on the "Pathology of Pulmonary Tuberculosis" and gave practical applications showing the relationship between the clinical findings and the various pathological manifestations of the disease.

Discussion of these various papers was further participated in by the various members present. The meeting was followed by refreshments.

Those present were the following: J. W. Bumgarner, G. M. Bumgarner, H. Vestal, E. R. Guinan, J. F. Feldman, W. E. Cunningham, M. Deininger-Keser, Rosa Powell, all of Richmond; J. M. McCullough of Crockett, S. N. Weil of Selby. Visitors attending were C. O. Bishop, W. H. Young, Mrs. E. Redman, R. N., and Mrs. N. Purvience, R. N., all of Richmond.

S. N. WEIL, *Secretary Pro Tem.*

FRESNO COUNTY

The regular meeting of the Fresno County Medical Society was held February 4, following dinner at the Fresno Hotel at 7 p. m. Forty members were present.

The minutes of the previous meeting were read and accepted.

The application for membership of F. J. Callahan of Madera and Ralph F. Blecker of 701 T. W. Patterson Building, Fresno, were read.

The following new members were elected: A. A. Arehart of Riverdale; Everett Morris of Auberry; Carl H. Shuck, Mattei Building, Fresno; Henry A. Randel, Griffith McKenzie Building, Fresno.

The board of governors recommended that the society authorize them to have the Welfare Committee, Dr. A. B. Cowan, chairman, confer with the Parent-Teacher's Association, with the view of having examinations for preschool children throughout the county. It was moved by Doctor Mitchell, seconded by Doctor Madden, that the recommendation of the board of governors be adopted.

The auditor's report was accepted.

Doctor Madden, chairman of Nomination Committee, moved that Dr. C. B. Collins be added to the list of delegates elected by the Fresno County Medical Society, Dr. C. M. Vanderburgh, alternate.

A letter was read from the district attorney that all the accident cases coming under Chapter 417, law in effect August 14, 1929, be reported immediately both by telephone and writing, to the police.

It was moved by Doctor Dau, seconded by Doctor Stein, that a committee be appointed to meet with the druggists to request that they do not refill prescriptions. The appointed are Doctor Dau (chairman), Doctor Stein, and Doctor Madden.

It was moved by Doctor Hare, seconded by Doctor James, that a committee be appointed by the chair to study hospitalization of people of moderate means.

Following is the committee appointed: Doctors Anderson (chairman), Dau, and James.

Dr. Robert W. Langley of Los Angeles presented the scientific paper of the evening, "Diagnosis and Treatment of Cardiac Pain."

J. M. FRAWLEY, *Secretary.*

KERN COUNTY

On December 12 the Kern County Medical Society held its annual dinner dance at the Bakersfield Club. A large percentage of the members and wives were in attendance. An excellent dinner, fine orchestra music for the dance, combined with the usual good fellowship of the occasion, resulted in a most enjoyable evening. The committees responsible for the success of the party consisted of Doctors Jones, McKee and Fox, on arrangements; and Mesdames Smith, Gundry, Moore, Fox and Bahrenburg, on decorations.

The regular January meeting of the society was held at Taft on the evening of January 16, with the members of the West Side Medical Society acting as hosts. This annual event proved a great attraction, as the reputation of the West Side members is famous for the dinners they serve and the entertainment they provide. A sumptuous repast at the Petroleum Club House, to the strains of Hawaiian music from an orchestra, served to satisfy the gastronomic desires of the twenty members present, who were then introduced to Dr. William Duffield of Los Angeles, the speaker of the evening.

Doctor Duffield, in his usual extemporaneous and interesting way, spoke on the subjects of organization; the question of state medicine; hospital taxation; the recently organized Woman's Auxiliary; and many other legislative matters that are at present of vital interest to the medical fraternity of our state.

If we had more medical missionaries of the Duffield type who would bring subjects such as he gave to us before our meetings, our organizations, and each of us as individuals, would profit much from it.

We reluctantly allowed Doctor Duffield to end his talk to permit him to catch his train, but not until a rousing vote of thanks and appreciation was extended to him, and an invitation to come back again.

G. E. BAHRENBURG, *Secretary.*

NAPA COUNTY

The regular monthly meeting of the Napa County Medical Society was held Wednesday, February 5, at the Ramona Gardens, Napa. A most delicious dinner preceded the business meeting.

The meeting was opened by Dr. George Dawson, president.

The minutes of the previous meeting were read and approved.

Communications were read and routine business transacted.

The secretary was authorized to pay for the printing of the regular meeting cards.

The committee appointed to make recommendations concerning malpractice suits was not ready to report.

A communication from Dr. C. E. Sisson, superintendent at Napa State Hospital, was read, inviting the Napa County Medical Society to hold its next regular meeting at the Napa State Hospital. The invitation was accepted.

The speaker of the evening, Dr. John Loutzenheiser of San Francisco, gave a most interesting discussion of "Anatomic Form and Its Relation to General Practice." His talk was illustrated with slides showing many typical cases of postural defect and the correction by properly fitting appliances. He stressed the importance of low-back pain and its relief by correct posture. An informal discussion of his subject followed.

The members present were: W. L. Blodgett, C. H. Bulson, H. R. Colman, G. I. Dawson, E. F. Donnolly,

C. A. Gregory, C. A. Johnson, D. H. Murray, L. Welti, G. J. Wood.

Edmund Butler of San Francisco, J. W. Green of Vallejo, C. E. Nixon of Napa State Hospital, and Loving, intern Napa State Hospital, were guests.

C. A. JOHNSON, *Secretary*.

ORANGE COUNTY

At the invitation of Dr. H. A. Johnston, the regular meeting of the Orange County Medical Society was held at Doctor Johnston's residence, 1401 South Los Angeles Street, Anaheim, on Tuesday, February 4, at 8 p. m.

Doctor Johnston gave us an interesting talk on "Surgical Clinics of Europe," and showed several reels of moving pictures. An exceptionally large attendance helped to make this meeting a success.

The business meeting was postponed for the evening with the exception of the first readings of three candidates: Robert S. Wade, E. D. Kilbourne, and H. MacVicker Smith. The appointment of a committee on membership and organization, in accordance with instructions from the state society, was made by President Robertson. This committee consisted of: J. L. Beebe, Anaheim; E. J. Steen, Fullerton; H. G. Huffman, Santa Ana.

Upon completion of the pictures, a delicious lunch was served by Mrs. Johnston.

A unanimous vote of thanks and appreciation was extended to Dr. and Mrs. Johnston for the evening's program and entertainment.

HARRY G. HUFFMAN, *Secretary*.

SAN BERNARDINO COUNTY

The regular meeting of the San Bernardino County Medical Society was held at the County Hospital in San Bernardino on February 4.

The meeting was called to order by the president at 8:10 o'clock, and the minutes of the previous meeting were read and approved.

There being no business before the house, the program of the evening was begun, an audience of sixty being present.

The following program was well received:

Motion picture of four reels—"Surgical Treatment of Peptic Ulcer," Davis & Geck, Inc. The discussion was limited to the time taken for changing the reels, and was given by Dr. Francis E. Clough of San Bernardino.

"The Medical Treatment of Peptic Ulcer" by Dr. F. A. Speik of Los Angeles followed. Discussion was opened by Dr. G. S. Landon of San Bernardino.

Supper was served following the scientific program.

E. J. EYTINGE, *Secretary*.

SAN JOAQUIN COUNTY

The stated meeting of the San Joaquin County Medical Society was held Thursday evening at eight o'clock, February 6, in the Medico-Dental Club, 242 North Sutter Street, Stockton.

The meeting was called to order by Dr. Harry E. Kaplan, president. The minutes of the previous meeting and of a special meeting of the board of directors were read and approved.

A letter from Robert Couchman of the San Jose *Mercury-Herald*, with reference to the forming of a local health district, was read. An answer, written by Doctors Kaplan and Sippy, was read, and on motion of Dr. Dewey Powell, seconded and carried, the president was authorized to send this letter as expressing the attitude of the San Joaquin County Medical Society toward the San Joaquin local health district.

In compliance with a letter from the State Committee on Membership and Organization, the president turned the matter of new members over to the local Committee on Admissions, Doctor Conzelman, chairman.

There being no further business, Doctor Kaplan introduced Dr. Walter Coffey of San Francisco, who

spoke at length on the subject of "State Medicine and a Plan to Combat It."

Doctor Coffey said that the matter was brought up at the state convention at San Diego. In Los Angeles especially, it was shown that, due to the numerous free clinics, the younger physicians were finding it hard to get a start. Attention was called to the numerous articles on the high cost of sickness, too often written by people who knew very little about the subject. It is high time that the medical profession should step in to protect its own interests and find ways and means to deliver medical care to the middle class of our people before the matter is taken out of our hands by lay organizations.

The slogan should be changed from the "High Cost of Sickness," to the "Low Cost of Health."

In an attempt to solve the problem, Doctor Coffey has submitted a plan which is at present being studied by the Council of the California Medical Association.

In closing, the doctor stressed the fact that every effort should be made to preserve the individuality of the physician and permit the patient to choose his own doctor. In addition the public should be taught methods for the conservation of health.

The discussion was opened by Dr. John H. Graves of San Francisco, who said that while the method of monthly payments for medical and surgical service was very old, the unique thing about the plan proposed by Doctor Coffey, is for the organized medical society to control and direct the service and preserve the free choice to the beneficiaries to call their own physician, provided he be an associate member.

The doctor quoted numerous interesting statistics, all of which went to show that in the high cost of sickness, all things considered, the doctor's fee represents the least part of it all. He admonished those present to "Read a little and don't believe too much. Talk a little, but not too much. Think a great deal."

Dr. Langley Porter, dean of the University of California Medical School, next spoke on the subject. He said that if someone makes a great enough cry about something it is soon translated into a need and people seek legislation as a remedy. The present situation he regarded as a crisis in morals. The sense of responsibility of individuals for their own medical care is disappearing. The plan of Doctor Coffey is a tremendous advance to meet the situation.

The doctor took issue on only one point. He felt that there was much more involved than medical care when a person became ill, and for those numerous items he felt each beneficiary should be a member of a benevolent order which contracted with the medical profession for care of its members. He stated that only 20 per cent of the cost of medical care goes to the doctor. The benevolent order should administer the other 80 per cent.

The paper was further discussed by Doctors English, O'Donnell, Doughty, Chapman, De Lappe, Barton Powell, Hammond, Friedberger, Dozier, McGurk, and Dewey Powell. In closing, Doctor Coffey stated that he deeply appreciated the large amount of general discussion on the subject and hoped to see every county society develop as much interest. He felt that there was now too much lay organization drifting into the conduct of the doctor's business. He felt sure that there are enough splendid business men among the physicians to make an assured success of such an organization. He stated that the societies and hospitals controlled by medical men are the only ones which maintain a system of graduated charges to meet the needs of patients of variable ability to pay. He urged that the care of the sick be kept out of both politics and the hands of laymen. A patient is not property.

The meeting was well attended, there being eight visitors and thirty-eight members present as follows: Visitors—Doctors Walter Coffey, John H. Graves and daughter, Langley Porter of San Francisco, Fred R. De Lappe of Modesto, Sutton, Davenport, Messrs. Curtis and Ladd of Stockton. Members—Doctors

S. R. Arthur, Barnes, Blackmun, Blinn, Broaddus, Buchanan, Chapman, Conzelmann, Dameron, Doughty, Dozier, English, Foard, Friedberger, Gallegos, Goodman, Hammond, Hanson, Holliger, Hull, Kaplan, Krout, La Berge, McCoskey, McGurk, Marnell, O'Donnell, Owens, Pinney, B. J. Powell, D. R. Powell, Powers, Priestley, Sanderson, Sheldon, Sippy, Smithers, and Williamson.

On motion of Dr. Dewey Powell the society adjourned with a rising vote in honor of the distinguished visitors of the evening.

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A special meeting of the San Joaquin County Medical Society Thursday evening, February 13, at 8:30 o'clock, in the Medico-Dental Club rooms, was called by the president to meet Dr. Edward H. Ochsner of Chicago, who delivered an illustrated paper on "Recent Fractures of the Hip."

In opening his paper the doctor first went carefully into the history of the methods found useful up to date, of which the two outstanding ones were that of Whitman and of Maxwell and Root. The earlier methods had proved inefficient in so many cases that as late as 1921 Galloway admonished the profession to treat the patient and let the fracture alone.

The Whitman method, while giving excellent results in most cases, required a very long period of treatment with the patient immobilized. This was a serious consideration in the matter of aged patients. The Maxwell-Root method permits the patient to rest in a semi-upright position, with some motion at the knee, and the limb can be used in two to three months, as compared to six to twelve months in the other.

In comparing the details, the doctor stated that x-ray pictures show that with the Maxwell-Root method there is less distortion of the bone trabeculae in the reunion of the fragments, and that is the reason there is an early function of the limb.

The method was first described in 1870 by F. J. Maxwell and later improved by Root of Iowa. Doctor Ochsner has used it since 1900 with much satisfaction. The procedure is described as follows: The patient is anesthetized either with ether or morphin; the femur is brought to a vertical position followed by outward traction and the limb lowered to the horizontal. Now a Buck's extension is rigged with weight approximating one-thirteenth that of the patient. In addition, the patient lies in a semi-reclining position and a broad strip of adhesive seven inches wide passing spirally about three-quarters the way around the thigh from below upward and from the outer aspect over and under, the end attached to a cord which in turn passes over a pulley and supports a weight sufficient to correct the tendency to eversion. The foot of the bed is supported on twelve-inch blocks. The leg is supported on a pillow, leaving the heel free and the sole of the foot vertical. After seven to ten days it is safe to permit gentle flexion of the knee. In this manner the patient is confined to bed for two to three months and then, with a light cast from the umbilicus to the knee and a high sole on the normal limb, he is allowed to be up on crutches.

The method is recommended because it is universal in its application and simple to apply. It is attended with reduced morbidity and mortality and fewer failures. Here the doctor cited case histories and statistics to prove his assertions.

The paper provoked considerable discussion, led by Doctor Sanderson and followed by Doctors Chapman, Hammond, Hench, Dameron, and Kaplan.

In answer to questions, Doctor Ochsner closed the discussion by saying that he did not reduce an impacted fracture if the angle was anywhere near correct; this angle is determined by the x-ray picture; and the blood supply as a source of success or failure is usually of little concern because the nutrient artery of the femur has never been shown to be involved in arteriosclerosis. Syphilis is a real hindrance to union.

Mr. J. W. Davidson, special agent for the Board of Medical Examiners, was introduced and spent some

time in explaining some of the points of the amended Medical Practice Act of 1929.

There being no further business the meeting was adjourned.

Those present were: Drs. Barnes, Blackmun, Blinn, Broaddus, Chapman, Conzelmann, Dameron, English, Frost, Gallegos, Hammond, Hench, Hull, Kaplan, LaBerge, Lynch, McCoskey, McGurk, O'Connor, O'Donnell, Peterson, Pinney, B. J. Powell, Priestley, Sanderson, Sheldon, Sippy, Van Meter, and Vischi. The following visitors attended: Drs. Sutton, Sherrill, and Vanderleek.

C. A. BROADDUS, *Secretary*.

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SANTA BARBARA COUNTY

The annual banquet meeting of the Santa Barbara County Medical Society was held at the University Club on Monday evening, January 13, with President N. H. Brush presiding.

The minutes of the previous annual meeting were read and approved.

At the commencement of the dinner Doctor Wills introduced Frank Greenough's string ensemble, who entertained with wonderful music during the dinner hour. Also, during that time, the Revelettes—three girls from the State Teachers College—gave several songs, which were enthusiastically received.

Doctor Brush then called upon Doctor Franklin, a recent member, for a few remarks. Doctor Soper, the honorary member of the society, also made a few remarks.

The president then introduced the speaker of the evening, Mr. Max Horwinski of Oakland, who was scheduled on the program as a German professor from the University of Wurtzburg, and who gave a most humorous and interesting talk on the origin of music.

Doctors Ussher, Wilcox, and Shelton were then unanimously elected into membership in the society.

Doctor Brown moved that balloting for officers be made by acclamation, and after some discussion this was declared unconstitutional.

The following officers were then elected for the ensuing year:

Hugh Freidell, president; Henry Ullmann, vice-president; W. H. Eaton, secretary-treasurer; O. C. Jones of Santa Maria and H. G. Hanze of Solvang, vice-presidents-at-large. Delegates for two years, Henry Ullmann and Hugh Freidell. Alternates, Drs. Mellinger and Eaton. Board of censors, Drs. Johnson, Thorner, and Means.

There were present at the meeting forty-six members and fourteen visitors.

There being no further business the meeting adjourned.

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The regular meeting of the Santa Barbara County Medical Society was held in the nurses' home at the Cottage Hospital on Monday evening, February 10, with President Freidell in the chair.

The minutes of the previous meeting were read and approved.

A communication from the State Association regarding the membership drive was read. The State Association is very desirous of getting every eligible practicing physician in the community as a member. The secretary reported that every man, to his knowledge, who was eligible was already a member, and it was moved, seconded, and carried that he report same to the State Association.

A communication from Mrs. Henry Rogers of Petaluma regarding the formation of a Woman's Auxiliary to the County Medical Society was read, and upon motion by Doctor Stevens, duly seconded and carried, the president appointed a committee to form such an auxiliary consisting of Doctors Mellinger and Bakewell.

The time of meeting was discussed, and it was the consensus of opinion that 8:30 was too late, and also it was a violation of the county society constitution.

Therefore in the future all meetings will be commenced promptly at eight o'clock.

The president desired that either a copy or an abstract of every paper presented to the society be given to the secretary for filing and future reference.

The secretary again announced the appointees on the board of censors, consisting of Doctors Johnson, Thorner, and Means; and Program Committee, consisting of Doctors Freidell, Henderson, and Eaton.

The scientific program was opened by Dr. Ussher, who gave a paper on "Bronchial Asthma Without Evidence of Protein Sensitivity." This was discussed by Doctors Henderson, Stevens, and Atsatt.

Doctor Geyman then followed with a talk on "Diverticulæ of Duodenum and Stomach," illustrated by lantern slides. This was discussed by Doctor Freidell.

Both of these papers were extremely interesting and were enthusiastically received.

There being no further business the meeting adjourned.

W. H. EATON, *Secretary*.

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SANTA CRUZ COUNTY

The February meeting of the Santa Cruz County Medical Society was held February 20, at Alexander's, Boulder Creek. After a most enjoyable dinner the meeting was turned over to Dr. Leo Eloesser of San Francisco, speaker of the evening. The paper dealt with pulmonary diseases, especially abscess and bronchiectasis, from a surgical standpoint. Etiology, symptomatology, diagnosis, and various types of therapy were discussed and illustrated with suitable lantern slides. A general discussion followed.

Dr. F. P. Shenk, eye, ear, nose and throat specialist, now located in Santa Cruz, was admitted to membership in the society. The resignation of Dr. T. F. Conroy, who has retired from practice, was accepted.

The following members of the society were present: Doctors Bettencourt, Congdon, Dowling, Harrington, Eiskamp, Fehlman, Atwood, Marshall, A. L. Phillips, Piper, Randall, and Shenk.

S. B. RANDALL, *Secretary*.

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STANISLAUS COUNTY

The regular monthly meeting of the Stanislaus County Medical Society on Friday, February 14, was called to order by President Hiatt.

The minutes of the previous meeting were read and approved.

A Committee on Membership and Organization was appointed by Doctor Hiatt, including Doctor Hartman, chairman, and Doctors Allen and Pierson. A discussion of doctors who did not belong to the county society revealed that only two eligible doctors were not members. It was decided that an attempt be made to get these two to join the society.

Doctor Hiatt announced that on April 11 the society would have ladies' night, and the program would consist of moving pictures and interesting case reports by members of the society.

Dr. Charles A. Lunsford of Oakland gave a very interesting lecture on the subject "Epidermophytosis," illustrated with slides.

DONALD L. ROBERTSON, *Secretary*.

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VENTURA COUNTY

The February meeting of the Ventura County Medical Society was held in the new offices of Dr. D. G. Clark and Dr. William Felberbaum in Santa Paula, Tuesday evening, February 18. President D. G. Clark opened the meeting.

Members present were: Doctors Wright, Schultz, Bianchi, W. S. Clark, Tillim, Armitstead, Illick, Yoakum, Felberbaum, Hendricks, Manning, Osborn, Shore, Smolt, Achenbach, Bardill, Welsh, and Johnson.

The minutes were read and approved.

A letter from the state secretary requesting names of delegate and alternate elected for two years was read. Moved and carried that Doctor Achenbach, having served last year as delegate, be elected for one year more, and that Doctor Bardill be elected alternate for two years.

Moved and seconded that the secretary be instructed to write state senator and representative protesting against proposed change in prohibition regulations. Carried.

The program for the evening consisted of an informal lecture, given by Dr. Samuel Robinson of Santa Barbara. His subject was "Malignant Tumors of the Lower Bowel." Points in diagnosis were briefly touched upon, and then a comprehensive description of the surgical technique of removal of these tumors was presented.

At the close of Doctor Robinson's paper the meeting was adjourned. Refreshments were served by Doctors Clark and Felberbaum.

CHARLES A. SMOLT, *Secretary*.

CHANGES IN MEMBERSHIP

New Members

Alameda County—Judith Ahlem, Edward Purcell, Brooks P. Stephens.

Fresno County—Kenneth D. Luechauer.

Lassen-Plumas County—William R. Harder.

Los Angeles County

Clarence E. Bird
LeRoy Crummer
Delmer L. Davis
Edward C. Donohoe
Albert F. Heimlich
Herbert A. Judson
Romeo J. Lajoie
Verne M. Mantle
Samuel S. Mathews
Cyrus W. Polcy
John H. Rindlaub
David H. Rosenblum
Joseph Sandie
Benjamin Harry Sherman
Edward A. Skaletar
Lawrence W. Smith
John M. Spaulding
Carl I. Sulzbacher
Roy N. Taylor
Elwyn E. Terrill
M. G. Varian
M. Russell Wilcox
Leon Wolff
F. LeGrand Noyes
James M. Odell
Arthur N. Nelson
Franklyn Thorpe
Elroy F. Sheldon
J. Dickson Oyler
Donald G. Bussey

Monterey County—Horace L. Dormody, Hugh F. Dormody.

Orange County—Richard C. Cochran, Clarence Anson Neighbors.

San Francisco County—Roger U. Campbell, Kaho Daily, Francisco L. A. Gonzales, Keene O. Haldeman, J. Laverne Laughton, Ruth A. Nethercut, S. D. Patek, John F. Quinlan.

Santa Barbara County—E. K. Shelton, N. T. Ussher, A. B. Wilcox, Albert J. Holzman, Marthe Cresson.

Transferred Members

Ernest Eric Larson, from Yolo to Los Angeles County.

Charles E. Sisson, from Mendocino to Napa County.
Mast Wolfsohn, from San Francisco to San Mateo County.

Norbert J. Gottbrath, from San Francisco to Santa Clara County.

Leonard W. Ely, from San Francisco to Santa Clara County.

Resignations

Warren H. Slabaugh, Los Angeles County.

Gilbert Van Vranken, Los Angeles County.

Louis L. Sherman, Alameda County.

Jessie B. Farrior, Alameda County.

Arthur Wegeforth, San Diego County.

Joseph Van Becelaere, San Diego County.

Deaths

Barsotti, Camillo. Died at San Francisco, February 1, 1930, age 67 years. Graduate of Royal University of Florence Faculty of Medicine and Surgery, Florence, Italy, 1887. Licensed in California, 1892. Doctor Barsotti was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Scholl, Marguerite Julia. Died at Los Angeles, January 17, 1930, age 36 years. Graduate of University of Southern California School of Medicine, Los Angeles, 1921. Licensed in California, 1921. Doctor Scholl was a member of the Los Angeles County

Medical Association, the California Medical Association, and the American Medical Association.

OBITUARY
Walter Watkins Davis
 1879-1930

On February 1, 1930, at 7:30 p. m., Walter Watkins Davis passed away at his residence in Brea, California. Death was the result of pneumonia.

Doctor Davis was born in Pittsburgh, Pennsylvania, June 13, 1879; son of William P. and Deborah Watkins Davis. He was educated at Pittsburgh high school; Western Pennsylvania College (now University of Pittsburgh) medical department, M. D. 1903; interned at Reinemon Maternity Hospital, Pittsburgh, 1903. Following this, Doctor Davis engaged in a general practice at Pittsburgh, Pennsylvania, and Imperial, Pennsylvania, until 1912, when he removed to Anaheim, California. In Anaheim he was associated with the Johnston-Beebe-Clark Sanatorium as bacteriologist for two years. He located in Brea in 1914.

During the war, Doctor Davis served as a commissioned first lieutenant at Camp Lewis, Washington, then was sent overseas with Base Hospital 93, serving in Mont Dore, France, and Coblentz and Newied, Germany. He was discharged at Camp Dix, New Jersey, July 9, 1919, after thirteen months of active service. Immediately after his discharge from the service he returned to Brea and resumed his extensive practice.

Doctor Davis married Florence Grewco of Pittsburgh, June 6, 1906. She and one son, David William, survive him.

He was an Episcopalian, member of the American Legion, a Pythian Knight, a Republican, member of the Orange County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

Doctor Davis was only fifty years old at the time of his death, but as a practitioner he had a large following and was loved and respected by his confrères.

**THE WOMAN'S AUXILIARY OF THE
 CALIFORNIA MEDICAL
 ASSOCIATION***

OFFICIAL NOTICE

Secretaries of all county auxiliaries are requested to furnish a list of officers and members to the State Auxiliary secretary, Mrs. R. A. Cushman, 632 North Broadway, Santa Ana, Orange County, at least *thirty days* before the annual session at Del Monte on April 28 to May 1, in order that the state secretary may send in her report to the national secretary at the yearly session of the American Medical Association at Detroit, June 23 to 27.

The following counties are in the honor roll of auxiliary activities, and should each be represented at the Del Monte session by properly qualified delegates and alternates:

Contra Costa County—Mrs. J. M. McCullough, president.

Kern County—Mrs. F. A. Hamlin, president.

Los Angeles County—Mrs. J. F. Percy, president.

Orange County—Mrs. F. E. Coulter, president.

San Bernardino County—Mrs. H. E. Clough, president.

Sonoma County—Mrs. J. Leslie Spear, president.

JEAN F. ROGERS, *President.*

LOS ANGELES COUNTY

Organization Meeting of the Los Angeles County Woman's Auxiliary.—Dr. William Duffield called to order the preliminary meeting of the Los Angeles

* As county auxiliaries to the Woman's Auxiliary of the California Medical Association are formed, the names of officers should be forwarded to the state secretary-treasurer, Mrs. R. A. Cushman, 632 North Broadway, Santa Ana, and to the California Medical Association office, Room 2004, 450 Sutter Street, San Francisco. Brief reports of county auxiliary meetings will be welcomed for publication in this column. See advertising page 6 of each issue for state and county officers.

County Woman's Auxiliary at 2:15 p. m., Friday, December 27, 1929, in Room 412, Union Insurance Building.

After presentation of a brief history of the Woman's Auxiliary movement, Doctor Duffield retired and Mrs. James F. Percy took the chair.

Mrs. Martin G. Carter was elected chairman *pro tem*. The secretary then read the official call for this meeting and the underlying principles that govern the formation and regulation of the Woman's Auxiliary of the Los Angeles County Medical Association.

On motion of Mrs. Piness, duly seconded and carried, it was ordered that a Woman's Auxiliary of the Los Angeles Medical Association be formed.

On motion of Mrs. Pierce, duly seconded and carried, it was resolved that the by-laws, as read, be adopted.

Dues of the following charter members were then received: Mesdames F. S. Balyeat, Walter Bliss, J. H. Breyer, Martin C. Carter, John F. Chapman, Edgar F. Craft, Kenneth L. Davis, William Duffield, George G. Hunter, W. H. Kiger, E. M. Palette, William B. Parker, James F. Percy, Clarence W. Pierce, George Piness, Rea Smith, H. B. Tebbetts, W. E. Waddell, and Chalmer Hiram Weaver.

On motion of Mrs. Hunter, duly seconded and carried, the chairman appointed Mesdames William Duffield, chairman; E. M. Palette and H. B. Tebbetts as a committee on nomination of permanent officers.

After a ten-minute recess, the chairman of the Nominating Committee submitted the following names:

Mrs. James F. Percy, president; Mrs. P. S. Doane, first vice-president; Mrs. B. Von Wedelstaedt, second vice-president; Mrs. Martin G. Carter, secretary-treasurer.

On motions duly made and seconded and carried, the report of the Nominating Committee was accepted and officers as named were declared elected; dues of the local society were established as \$1 a year; the president was instructed to arrange for a joint meeting of the auxiliary and the Los Angeles County Medical Society, provided that Doctor Fishbein would talk on the Woman's Auxiliary, and the privilege of enrollment as charter members was extended until after the February meeting.

There being no further business, on motion duly made and seconded, the meeting adjourned.

* * *

Executive Board Meeting of the Woman's Auxiliary of the Los Angeles County Medical Society.—Mrs. James F. Percy called the meeting to order at 11:45 a. m., January 16 at the home of Mrs. Martin G. Carter, 3930 Ingraham Street, Los Angeles.

The president reported that Mrs. Edgerton Crispin had been appointed membership chairman. After the arrival of Mrs. P. Doane, a recess was called for luncheon.

The meeting reconvened at 1:20 p. m. and on motion of Mrs. Doane, seconded by Mrs. Von Wedelstaedt, the following standing rules were adopted:

1. All matters of business which members desire to bring before the Association shall first be presented to the board of directors for action. If not approved by the board, upon petition presented to the board, and signed by one hundred members of the Association in good standing, such business must be brought before the Association for action.

2. There shall be the following standing committees: Program, Membership Credentials, Hospitality, Hostess, and Ways and Means.

3. The Program Committee shall consist of three members together with the president of the Association who shall be chairman of the committee.

4. Admission to all meetings shall be by card of current year only.

5. A check for dues must accompany all application for membership.

6. No appeals for financial aid shall be made from the platform or in the Association room except by

permission of the Executive Committee, nor shall there be any personal canvass of funds.

7. Members may bring guests to all regular programs by paying fifty cents.

On motion of Mrs. Carter, seconded by Mrs. Doane and carried, the payment of bills amounting to \$1.95 was authorized.

On motion of Mrs. Von Wedelstaedt, duly seconded and carried, the president was authorized to have membership cards and notices of the February meeting printed.

On motion of Mrs. Doane, duly seconded and carried, meetings were set for 2:30 p. m. on the third Thursday of alternate months.

The minutes were read and approved and the meeting adjourned.

(MRS.) MARTIN G. CARTER,
Secretary-Treasurer.

NEWS

The Woman's Auxiliary of the Los Angeles County Medical Association gave a luncheon at the Women's Athletic Club, 833 Flower Street at one o'clock, Monday, January 6.

The president introduced Mrs. Ruggles Cushman, secretary of the State Auxiliary, and Mrs. Morris Fishbein of Chicago.

Dr. Morris Fishbein gave a talk on "The Woman's Auxiliary Movement."

The following signed as additional charter members: Mesdames Eliot Alden, H. D. Barnard, John Barrow, C. H. Bishop, H. R. Boyer, Harry V. Brown, Arnold Burkleman, Arthur Cecil, Edgerton Cripin, P. Doan, Roy Hammack, Samuel Ingham, Simon Jesberg, D. N. Jones, E. D. Kremers, Edmund L. Lazard, E. R. Lewis, T. Lyster, H. A. MacArthur, W. H. Mayne, H. F. Markolf, Harry G. Marxmiller, W. T. MacArthur, E. F. Nippert, John Nuttall, H. Olds, Oscar Reiss, Henry Rooney, H. E. Schiffbauer, H. Snure, Philip Stephens, J. E. Walker, B. Von Wedelstaedt, Ed H. Williams, Neal N. Wood, W. B. Wright, Jr., and A. H. Zeiler.

NEVADA STATE MEDICAL ASSOCIATION

W. A. SHAW	President
R. P. ROANTREE, Elko	President-Elect
H. W. SAWYER, Fallon	First Vice-President
E. E. HAMER, Carson City	Second Vice-President
HORACE J. BROWN	Secretary-Treasurer
R. P. ROANTREE, D. A. TURNER, S. K. MORRISON	Trustees

COMPONENT COUNTY SOCIETIES

NEVADA STATE MEETING

The annual meeting at Elko was a great success and all those who did not attend deprived themselves of lots of valuable instruction, as the program was first class in every particular. W. A. Shaw of Elko took his seat as president, and the following officers were elected: R. P. Roantree, Elko, president-elect; H. W. Sawyer, Fallon, first vice-president; E. E. Hamer, Carson City, second vice-president; D. A. Turner, Reno, trustee for three years; Horace J. Brown, secretary-treasurer.

The president has made the following committee appointments for the year:

Membership—A. C. Olmsted, P. De McLeod, W. H. Frolich.

Judicial—A. J. Hood, Elko; R. A. Bowdle, R. R. Craig, W. L. Howell, C. W. West, V. A. Muller.

Scientific Work and Program—M. A. Robison, E. L. Creveling, H. A. Paradis.

Necrology—E. E. Hamer, J. E. Worden, G. W. Green.

Entertainment—S. K. Morrison, D. A. Turner, W. L. Samuels.

Public Health and Education—M. R. Walker, W. A. Shaw, Mary H. Fulstone.

Military Affairs—T. W. Bath, C. E. Secor, W. A. Shaw, and Secretary.

Council—H. W. Sawyer, W. L. Howell, J. C. Cherry, C. E. Swezy, J. H. Hastings, D. A. Smith, L. P. Monson, Hal L. Hewetson, A. J. Hood, Elko; J. T. Rees, F. M. West, A. B. DeChene, M. J. Rand.

The president wishes to state that he and the secretary are willing and glad at all times to cooperate with any of the committees in more adequately fulfilling their duties during the year.

Do not forget that dues are now due and that you should send to the secretary \$10, for which he will send you a membership card and twelve issues of CALIFORNIA AND WESTERN MEDICINE. Members should bear in mind that this has nothing to do with the county society dues, which should be paid to their local secretary. Several of the Washoe County members were confused last year not knowing that the dues of both the county society and state association were raised, and only paid the \$5 dues to the county society. This left them without recognition, so far as the state association and the American Medical Association were concerned. We hope that no one will be confused on this point this year.

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ELKO COUNTY

All the news we have is the annual meeting of the Elko County Medical Society, which was held at Elko January 14, at which time the following officers were elected for 1930: R. P. Roantree, president; W. A. Shaw, vice-president; John E. Worden, secretary-treasurer; C. W. Eastman, trustee.

After the business meeting, all present enjoyed a social dinner together at Sherell's Café.

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WASHOE COUNTY

The regular monthly meeting of the Washoe County Medical Society was held on the evening of February 11 at the Reno City Hall. President E. E. Hamer, secretary of the Nevada State Board of Medical Examiners and president of the society, presided.

The program feature of the evening varied at the beginning by having a first-aid feature demonstration by members of the local Bell Telephone Company, led by Mr. A. E. Bodle of Bell Telephone employ. The demonstration was treatment of a hypothetical case of fracture of the skull with arterial bleeding from cut over the eye, electric burn of the right hand, and a compound fracture of the right leg at ankle-joint received by a lineman in a fall from a pole. The first-aid class gave artificial respiration, bandaged the head, sterilized the wounded hand and leg, bound the hand, and immobilized the injured leg with splints which bound the injured leg to the well one. The operation was scientifically completed in seventeen minutes.

During the demonstration the physicians looked on and enjoyed the systematic methods in which these young men worked and their apparent ease which was the result of experience and practice. They were heartily cheered and commended for the excellency of their demonstration. Men like these and like the Boy Scouts, available for emergencies, are a public benefit in any community.

The medical papers for the evening were in the nature of presentation of cases of skull and brain injuries, led by Dr. Donald Maclean and followed by Dr. Horace J. Brown. Doctor Maclean gave a history of six private cases. The synopses of four are here given.

Case 1. Japanese laborer. Injury produced by dynamite blast, piece of rock the size of a head striking victim on top of head, splitting skull in two and laying wide open both hemispheres. No rock or bone found in brain. Very little hemorrhage. Patient perfectly conscious, but could not see. Pupils equal but dilated. Pulse 60, but shortly dropped to 40 or less. Wound was one and one-half inches wide by four

inches long. Skull completely gone from wound area. Membranes torn, hemispheres widely separated, heart beat seen registering in the brain. No pain, but totally blind, with ringing of the ears. No operative procedure done. Ate normally, secretions normal for two days. Night of second day, temperature was 105 degrees F., moribund, died at five o'clock.

Case 2. Prizefighter, who became "punch drunk" in encounter. Then became quartz miner. Considered "not there" mentally by friends. Was shot by forty-five caliber Colt for petty theft. Bullet struck top of head, tearing skull off completely to frontal eminence. Ran 250 yards and hid for two hours after shot. Was semiconscious when found. Examination showed no apparent brain injury, although membranes were torn. Pulse was about 100. Developed acute meningitis, with temperature of 106 degrees F. Died on third day.

Case 3. November 30, 1915, 21-year-old boy was kicked by horse. Both feet of the animal struck boy over left parietal. He was seen almost immediately by doctor. Boy was unconscious, pulse 30, respiration slow and stertorous, parietal bone fractured in many places. Fracture extended over vault down to parieto-occipital junction, right side. Decompression done. Restoration of fragments of bone to as nearly normal contour as possible. In operation, dura found intact and was left so. Unconscious eleven days. After that there was a gradual return to consciousness. Began to work on April 1, 1916. May, 1920, attacks of dizziness and could not maintain his balance. He was taken to Stanford Hospital. There spinal puncture was done with no result. Then brain was needled through area of fracture. Several ounces of fluid were drained off. Dizziness relieved for several days, but July 29 became paralyzed and completely deaf in right ear. August 9, occipital decompression was done, with relief of all symptoms, but leaving patient with paralysis of pharynx. August 17, operation was done for removal of tumor of cerebellum. Died on August 19. Diagnosis was sarcoma of cerebellum.

Case 4. Auto accident on night of August 16, 1929. Five boys in a Ford coupe smashed into pine tree with sufficient force to snap tree off thirty feet above ground. One boy was killed instantly, one died shortly after. Two others escaped with practically no injuries. Patient here described had a terrific concussion, scalp wound over left parietal, tear over left ear, and excoriation of left side of neck. Unconscious when brought to hospital few hours after injury. Eyes reacted normally. Apparent paralysis of left arm and leg, with Babinski of left leg and ankle clonus of same. Right side normal. X-ray negative for fracture of skull. Diagnosis was concussion, with paralysis of right arm and right leg due to contrecoup. Pulse dropped to 50. Temperature was 102 degrees F. Antitetanic serum given, with result that temperature rose to 105 degrees and 107 degrees. Eighteen days after accident, subtemporal decompression was done. Bulging of dura was opened and considerable yellow fluid evacuated. Wound closed with drain in dura which was removed in forty-eight hours. Unconscious twenty-six days. Consciousness returned slowly. Urine voided involuntarily; bowels by enema. After recovering consciousness, paralysis of arm and leg gradually subsided. Home on October 6. Recovery practically complete except for slight limp in left leg.

Doctor Brown followed Doctor Maclean with extemporaneous citing of instances of brain injuries which brought out the value of blood pressure readings to determine the progress of the brain hemorrhage. There were running comments on brain cases seen in the World War by those who had served overseas in the great conflict.

The meeting concluded with a satisfied feeling by all present that it was an hour well spent in the dis-

cussion of a type of case which calls for experienced judgment of highest type.

THOMAS W. BATH, *Secretary*.

NEVADA NEWS

On December 10, at the Elko General Hospital, the following members of the staff were elected as officers for 1930: John E. Worden, chief of staff; W. A. Shaw, vice; W. A. Haas, secretary.

UTAH STATE MEDICAL ASSOCIATION

H. P. KIRTLEY, Salt Lake City.....President
WILLIAM L. RICH, Salt Lake City.....President-Elect
M. M. CRITCHLOW, Salt Lake City.....Secretary
J. U. GIESY, 701 Medical Arts Building,
Salt Lake City.....Associate Editor for Utah

COMPONENT COUNTY SOCIETIES

SALT LAKE COUNTY

The regular meeting date of January 13 was changed to January 10 in order that a banquet could be held for Dr. Morris Fishbein of Chicago, editor of *The Journal of the American Medical Association*.

The meeting was called to order at 8:30 p. m. by President M. M. Nielson, who introduced the speaker of the evening. Seventy-eight members and ten visitors were present.

Doctor Fishbein gave a very interesting talk upon the "Cost of Medical Care."

President Nielson announced at the close of the talk that Doctor Fishbein would give a public lecture, under the auspices of the B'Nai Brith Forum, at the Assembly Hall on January 11, at 8:15 p. m. The subject of the talk was "Fads and Quackery."

The meeting was adjourned at 9:40 o'clock.

* * *

The regular meeting of the Salt Lake County Medical Society, held at the Holy Cross Hospital Monday evening, January 27, was called to order by President M. M. Nielson at 8:05 o'clock. Forty-eight members and eight visitors were present.

The minutes of the meeting of December 9 were read and, after correction by Doctor Pace, accepted. The minutes of the meeting of January 10 were read and accepted without correction.

The clinical meeting was then turned over to L. N. Ossman. The program was as follows:

The Diagnosis of Antrum Disease—T. F. Welsh.

Case of Duodenal Ulcer and a Case of Appendicitis—A. J. Hosmer.

The Use of Horse Serum in the Treatment of Burns, Case Report—S. G. Kahn.

A Case of Patent Urachus—G. N. Curtis.

Hypernephroma—W. G. Schulte.

Empyema—T. W. Stevenson.

Cholecystography—J. P. Kerby.

These papers were discussed by C. L. Sandberg, J. A. Phipps, F. Leaver Stauffer, and B. Coray.

J. Z. Brown reported for the Committee on Selection of a Meeting Place. J. P. Kerby moved that the society continue to meet at the Newhouse Hotel. Motion seconded and carried.

The meeting adjourned at 9:45 o'clock.

BARNET E. BONAR, *Secretary*.

UTAH NEWS

The regular weekly meetings of the Academy of Medicine, held Thursdays, have continued since last report. On the several dates specified below the following programs were presented:

January 16—Recent Findings in Etiology of Influenza, L. L. Daynes. Polyposis Gastrica, George Middleton.

January 23—Thrombo-Angiitis Obliterans, H. T. Anderson. Medical Notes from San Francisco, E. L. Viko. Subphrenic Abscess, L. A. Stevenson.

January 30—Schilling Index, T. A. Flood. Talk on Pneumothorax, Doctor Van Scoyoc.

February 6—Addison's Disease, Doctor Skofield. Surgical Treatment of General Peritonitis, Doctor Young. Prevention of Postoperative Emboli, Dr. F. Hatch.

* * *

One of the outstanding events of the professional world during the past month was the joint banquet of the Salt Lake Dental and Salt Lake County Medical Societies. The Salt Lake County Dental Society as hosts entertained the doctors at the Elks' Club on the night of Friday, February 7.

Some two hundred members of both societies attended. During and following the dinner, entertainment was staged in the form of vocal numbers, adagio dancing, and a one-act playlet of comedy type. Addresses were made by Doctor Irvine and Doctor Wherry, and a response by Dr. M. M. Nielson rounded out the evening, which came to an enthusiastic close about nine o'clock.

The Salt Lake County Medical Society desires to express its sincere appreciation of the feeling of good fellowship and coöperation which lies back of this very pleasant occasion. Similar functions have occurred in the past, and have contributed much to the spirit of good fellowship between the two professional groups.

* * *

The regular meeting of the Salt Lake County Medical Society was held at the Salt Lake County Hospital on Monday, February 10.

The meeting was called to order at 8:10 p. m. by President M. M. Nielson. Thirty-two members and fourteen visitors were present.

The minutes of the previous meeting were read and accepted without correction.

The clinical program was then turned over to Clark Young. The following papers were presented:

Arthroplasty of Knee—Interesting Fractures, R. J. Alexander; Differential Diagnosis of Heart Murmurs, Ralph Tandowsky; Spinal Fusion (Hibbs') Operation for Pott's Disease, L. C. Snow; Gastric Carcinoma, Richard Baylor; Rhinorrhea—Spinal Fluid, W. H. Rothwell; Clinical Report of Forty-Five Cases of Spinal Anesthesia, R. D. Smith (by invitation); Conservative Treatment of Abortion, Ray T. Woolsey; Duodenal Ulcer, Frank H. Low (by invitation); Musculospiral Paralysis—Unknown Origin, R. O. Johnson.

* * *

The following report of the Necrology Committee was made:

In Memorium—E. G. Gowans

Whereas, Our comrade, Dr. E. G. Gowans, who has for so long been an admired and respected member of our profession, our society, and an honored citizen of the state, has been taken from us by the summons of a Power greater than ours; and

Whereas, We feel his loss and a deep sympathy for the loss of those who loved him in a more intimate way; therefore be it

Resolved: That the Salt Lake Medical Society officially recognize the death of Doctor Gowans by spreading a copy of this resolution upon the minutes of the society as a permanent record, and by forwarding a copy of the same to the family of the deceased as an attest of that regret which is ours as well as theirs.

J. Z. Brown moved that the report of the Necrology Committee be accepted and filed. Motion seconded and carried.

* * *

A report of the committee regarding a communication from the Salt Lake General Hospital asking for the sentiment of this society in respect to professional cards being allowed in the year-book of this institution was made. It was the sense of the committee

that names of the doctors who would contribute to the magazine fund be printed in one page of the advertising section of that magazine. J. P. Kerby moved that the report be accepted. Seconded and carried.

The report of the board of censors on the application of J. M. Schaffer was to the effect that the applicant be notified to apply to the nearest component society of the Utah State Medical Association.

The applications of Maurice Gordon and J. R. Wherritt were read and given to the board of censors for investigation.

The applications of Mildred Nelson and Orin Ogilvie were favorably reported upon by the board of censors, and both were unanimously elected members of the society.

F. M. McHugh took the chair and announced that on February 24 there would be a dinner meeting at the Newhouse Hotel at 7 p. m.

The meeting was adjourned at 10 p. m.

BARNET E. BONAR, *Secretary*.

OBITUARY

Ephraim G. Gowans
1868-1930

Dr. Ephraim G. Gowans had for many years been prominently known as an educator, jurist, and physician. He was born in Tooele, Utah, February 1, 1868, the son of Hugh S., and Betsy Gowans, who came to Utah from Scotland in 1855. He received his early education in the county schools and later studied at the Brigham Young Normal School in Provo, graduating in 1891. Doctor Gowans married Mary Lyman shortly afterward and then took a bachelor of science degree from Brigham Young College at Logan. He graduated in medicine from the Baltimore Medical College and later took a postgraduate course at Johns Hopkins. For a time he practiced his profession in Springville, but later removed to Salt Lake. In 1907 Doctor Gowans was appointed judge of the Juvenile Court, holding the post until 1909. In 1909 he was appointed superintendent of the State Industrial School in which office he continued until 1915. At the close of his term as industrial school superintendent he served four years as superintendent of public instruction and then for two years as director of health, retiring from the latter position in 1921.

As an educator he was at different times instructor at Brigham Young College, Brigham Young University, and the University of Utah from which latter position ill health compelled his retirement in 1929. He was a former member of the Bonneville and Exchange Clubs, the Deseret Sunday school general board, and the Ensign Club. Doctor Gowans died Wednesday, February 5, 1930. He is survived by his widow, a son, three daughters, a sister, and three brothers.

Eulogy of the Doctor.—There are men and classes of men that stand above the common herd—the soldier, the sailor, the shepherd not infrequently, the artist rarely, rarer still the clergyman, the physician almost as a rule. He is the flower of our civilization and when that stage of man is done with, only to be marveled at in history, he will be thought to have shared but little in the defects of the period and to have most notably exhibited the virtues of the race. Generosity he has, such as is possible only to those who practice an art and never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, Herculean cheerfulness and courage. So it is that he brings air and cheer into the sickroom and often enough, though not so often as he desires, brings healing.—*Robert Louis Stevenson*.

MISCELLANY

Items for the News column must be furnished by the twentieth of the preceding month. Under this department are grouped: News; Medical Economics; Correspondence; Department of Public Health; California Board of Medical Examiners; and Twenty-Five Years Ago. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

California Tuberculosis Association Meeting.—The annual meeting of the California Tuberculosis Association will be held in Merced on April 7 and 8, with headquarters at the Tioga Hotel. Those interested are cordially invited to attend.

The regular annual business meeting will be held on April 7, and on the evening of that day there will be a dinner at the hotel, followed by an address by Dr. J. W. Mountin of the United States Public Health Service on "Tendencies in Public Health Organization and Their Relation to the Tuberculosis Program."

On Tuesday, April 8, the clinical section will meet both morning and afternoon. The program is as follows:

Morning—Dr. F. M. Pottenger, chairman:

Report of heart work.

Parenchymatous Lesions in Childhood—Dr. Chesley Bush.

Demonstration of interesting x-ray films.

Afternoon—Dr. William C. Voorsanger, chairman:

Blood Sedimentation Tests in Tuberculosis—Dr. Robert A. Peers.

Healing in Tuberculosis—Dr. Philip H. Pierson and Dr. W. R. P. Clark.

The Results of Chest Surgery.—A round-table discussion of statistics conducted by Dr. Leo Eloesser.

Attention is directed to the final items on the program of both morning and afternoon. It is hoped that all those who possess unusually interesting x-ray films illustrating phases of chest pathology will bring these films for demonstration. In this manner many unusual conditions will be brought before the meeting.

The discussion of the results of chest surgery, to be led by Doctor Eloesser, will be open to all those having available statistics. It is felt that the time has passed when the report of a few cases of thoracoplasty, phrenicotomy and the like is interesting, but a composite picture of the experience of many men along this line should be of the utmost value.

Reservations should be made as soon as possible at the Tioga Hotel, Merced, and should include dinner reservations for the evening of April 7.

The Pacific Coast Surgical Association held its first annual meeting last Friday and Saturday, February 7 and 8 at Del Monte.

The officers elected for the ensuing year are: J. Tate Mason of Seattle, Washington, president; Rexwald Brown of Santa Barbara, first vice-president; E. W. Rockey of Portland, Oregon, second vice-president; E. L. Gilcrest of San Francisco, secretary-treasurer.

The council consists of the following: Thomas O. Burger of San Diego, Philip K. Gilman of San Francisco, A. Aldridge Matthews of Spokane, Washington; George W. Swift of Seattle, Washington.

The association will meet next year in Victoria the last week-end in February. Clinics will be held in Seattle the two previous days of the meeting.

Northern California Neuropsychiatric Society.—On December 9, 1929, the Northern California Neuropsychiatric Society was formed. At a preliminary

meeting held at the University of California Hospital on the above date, the following officers of the newly formed society were elected: Dr. Julian Wolfsohn, president; Dr. Edward Twitchell, vice-president; and Dr. Mark Gerstle, Jr., secretary-treasurer. It was agreed that meetings should be held on the second Monday evening of alternate months at either Stanford, University of California, or the San Francisco hospitals.

The membership of the society comprises the neuropsychiatric staffs of both the University of California and Stanford medical schools as well as neuropsychiatrists in the San Francisco region and other cities in the northern portion of the state. Twenty-four members have joined.

The second meeting of the society was held on February 10 at Lane Hall at which meeting a paper was read by Dr. F. L. Reichert on some experimental work which he has done on hypophysectomized puppies.

The second paper was by Dr. Helen Detrick (by invitation), and with the third paper by Doctor Proeschner (by invitation) constituted a symposium on recent advances in the treatment of epilepsy.

Medical Library for University of Southern California.—Gift of the professional library of the late Dr. C. F. S. Tate to the School of Medicine of the University of Southern California and the recent acquisition of the large book collection of Dr. Charles W. Bryson have made possible the establishment of a separate medical library by the university medical school. According to an announcement by Dean William D. Cutter, the library will be housed for the present in two rooms in the basement of Bridge Hall, which are now being outfitted. The appointment of Miss Marguerite Campbell, formerly librarian of the Peking Union Medical School, Peking, China, and of the Boston Medical Library, as custodian was also announced.

The library will be opened for use in a few weeks, with between four and five thousand volumes available for reference.

Doctor Tate whose name will be associated with the founding of this new library was a graduate of the University of Southern California in 1895. He was a descendant of the Fee and Tate families of South Carolina, was born in Oakdale, Illinois, August 1, 1873, and moving to California in 1882, was educated in the schools of Santa Ana and Los Angeles. His medical training was received at the University of Southern California and the University of Pennsylvania, and his practice was carried on entirely in Los Angeles.

California Conference of Social Work.—The twenty-second annual meeting of the California Conference of Social Work will be held at Santa Barbara this year, from May 13 to 17. A cordial invitation to attend the conference and affiliated kindred groups is extended to members of social and health agencies throughout California, and to all persons interested in problems of social welfare.

Under the leadership of Justin Miller, dean of the law school of the University of Southern California,

elected president of the conference for 1930, and Erle Fisk Young, Ph. D., chairman of the Program Committee, plans for the Santa Barbara meeting are well under way. "Social Progress and the Law" has been selected as the conference theme, but the program will range over the whole field of interests covered by the standing sections on health, family and child welfare, delinquency, organization and administration, education, recreation, industry, and racial and citizenship problems.

Recreation Center will be headquarters—an ideally central location with meeting places and hotels in close proximity.

Advance information regarding conference plans will appear in the February issue of the conference quarterly bulletin, or may be obtained from the executive secretary, Miss Anita Eldridge, Exposition Auditorium, San Francisco.

Medical Summer Courses, University of California. The University of California Medical School will offer summer courses for graduates in medicine from June 2 to 21, 1930.

The first week will be devoted to a review of recent advances in fundamental sciences and in clinical medicine and surgery.

During the second and third weeks, courses of two weeks' duration, similar to those of the past five years, will be offered in general medicine, surgery, the specialties, and laboratory subjects.

CORRESPONDENCE

President's Letter to the Members

To the Members:

The present unfortunate confusion regarding the Coffey-Humber cancer treatment appears to call for some statement in *CALIFORNIA AND WESTERN MEDICINE*. The following is a personal statement made in an effort to clarify this subject:

There is grave danger that contemplation of the glorious results of a true cancer cure may so stimulate the imagination of some of us that the necessity for sober proof will be overlooked.

Doctors Coffey and Humber have at no time claimed that their treatment is a *cure*. They have at all times in their statements indicated that much and prolonged critical research must intervene before a positive statement can be made.

The press, on the other hand, has, while generally quoting the authors of the treatment fairly, so magnified certain phases, and permitted its own obvious enthusiasm to dominate the stories, that the unscientific public has quite generally accepted the treatment as a cure.

The result of such publicity is most regrettable. The judgment of the value of the treatment has been removed entirely from scientific environment and vested in the public, which can have no scientific basis for opinion. A painful result of publicity, and one regretted by Doctors Coffey and Humber, is that many cancer sufferers who cannot avail themselves of the treatment will, in hope, delay timely operations.

Another result is the insurmountable impediment to scientific work, which the vast amount of unsolicited material constitutes.

The present status of the treatment, according to its authors, is that in certain cases its exhibition softens tumor masses and reduces pain. In a very few cases, there has been an apparent cure. Sufficient time has not elapsed to announce a cure in any case. Too few cases have been followed through to justify opinion.

Doctors Coffey and Humber do not claim a cure. They have confidence that their treatment has great promise, and they wish time for research.

No final scientific opinion can be formed short of some few years from this date. Preliminary opinions can be of no immediate value. Unfavorable opinions must be unscientific unless based on evidence of value comparable to that required to demonstrate success. It is devoutly hoped that *CALIFORNIA AND WESTERN MEDICINE* may at some time be permitted to publish fulfillment of all hopes for the Coffey and Humber treatment.

Meanwhile let us avoid judgment, whether favorable or unfavorable.

MORTON R. GIBBONS,
President, California Medical Association.

Subject of Following Letter: Postponement of Presentation of Paper by Doctors Coffey and Humber

To the Editors:

Because of the fact that it has been announced that we are to present a paper, "A Preliminary Report of a Potent Extract from the Cortical Substance of the Suprarenal," before the San Francisco County Medical Society on March 11, 1930, we are sending you a copy of a letter sent by us to the president of that society. The letter is as follows:

February 27, 1930.

Dr. Harold K. Faber,
President, San Francisco County Medical Society,
San Francisco, California.

Dear Doctor Faber:

Knowing that the San Francisco County Medical Society is desirous of having a complete report of the work on the extract of the cortical substance of the suprarenals, and that a committee from the society can aid materially in determining the results obtained in the series of cases now being studied, we would be very glad to have such a committee appointed by you from among the members of the San Francisco County Medical Society.

We would also welcome the postponement of our appearance before the society from March 11, 1930, until the general meeting in April, or at such later time as the above committee is ready to report its findings also.

Very truly yours,

W. B. COFFEY,
JOHN D. HUMBER.

The meeting has been postponed to some date to be announced later and, in order that members may have a basis for discussion when the material is presented, we are setting out in this letter the premises which we believe to be true and upon which we have based our investigations and in support of which we believe we can produce experimental evidence. The premises are:

1. Nature has provided certain controls or "governors" in our physiological make-up, among which is a control or stabilizer of *tissue growth*.

2. This control or stabilizer of the development and multiplication of tissue cells is of the nature of an active principle or hormone.

3. This hormone is produced by certain cellular elements of the body which are found to exist in considerable amounts in the cortex of the suprarenal glands.

4. This hormone or active principle may be produced in other parts of the body yet to be determined. We have found that extracts made from other tissues have what we think is probably an inhibitory effect on cellular growth where normal cellular growth has been disturbed.

5. This hormone or active principle is found in a highly potent form with unmistakable effect upon malignant cellular growth in extracts made from portions of the cortex of the suprarenal glands.

6. This extract containing the active principles has a destructive effect upon malignant tissue, causing its necrosis and death, without destruction of normal tissues.

Very truly yours,

W. B. COFFEY
JOHN D. HUMBER.

Subject of Following Letter: Coffey-Humber Studies Concerning Cancer

Editors' Note: Doctors Walter B. Coffey and John D. Humber of San Francisco on January 6 last, presented to the San Francisco County Pathological Society a preliminary report concerning some cancer studies. Reference is made thereto in an editorial in this issue of CALIFORNIA AND WESTERN MEDICINE. For the convenience of readers of this journal who are interested in this subject, the letter printed below, which was sent upon request to *The Journal of the American Medical Association* and which appeared in the February 1 issue of that publication, is here reprinted. It is hoped to have a full report of the studies of Doctors Coffey and Humber in a later issue of CALIFORNIA AND WESTERN MEDICINE.

The letter was printed under the caption:

The Effect of a Suprarenal Extract for Malignant Growth.—To the Editor: In a report made to the San Francisco County Pathological Society, January 6, we pointed out that our experimental work on endocrine extracts began in 1925, attempting to find a vasodilator and a stabilizer of tissue growth. After many failures, an extract of suprarenal cortex from sheep was made which reduced blood pressure when injected subcutaneously. Further development of the work demonstrated that this extract was a stabilizer of growth. A few patients with high blood pressure together with a malignant condition had, under treatment, a lowering of blood pressure from 240 to 150, together with a sloughing of the malignant tissue and subsequently disappearance of the growth. Later, we injected the extract only in patients in whom the malignant growth was inoperable, with the possibility of obtaining autopsies. One patient, who had an embryonal carcinoma of the testes which could not be completely removed, was given the first injection, August 22, 1927, and is now without any evidences of tumors. Another patient with inoperable carcinoma of the rectum and complete obstruction was referred for colostomy, and was given a first injection September 1, 1929. At present this patient is without any evidence of tumor and so far has had no ill effects from the injections and has apparently recovered. Within from twenty-four to forty-eight hours after the first dose, the tumor masses begin to soften, then liquefy, and within ten days begin to slough. If the masses are favorably located, many have even begun to slough within forty-eight hours. Although our series to date is small, we have had an opportunity to study the changes in the tissues of patients who died. (Others we observed clinically and were successful in obtaining autopsy.)

All tissues were studied by Dr. A. M. Moody. The essential changes are necrosis of tumor cells which cannot at present be differentiated from that occurring naturally in malignant tumors. They were present in one patient with primary carcinoma of the kidney; in the tissues of the lungs, about the secondary tumor nodules, which were all necrotic, marked vascularization surrounded each nodule. One patient who had received injections for two and a half months prior to death, and who died from kidney insufficiency as a result of bilateral ureteral obstruction, had atrophic suprarenals, measuring only three millimeters in thickness. This was a primary carcinoma of the cervix which, during the course of injections, had sloughed away. No secondary growths beyond the uterus and bladder were found, although microscopic scattered mitosing cells were present in the bladder wall.

This work to date has been purely of an experimental nature to determine the effect on malignant tumors. Softening, with liquefaction, has occurred in all tumors thus far studied. These tumors, except one, were carcinoma of different types; the exception is a recurrent spindle cell sarcoma, with extensive metastases. Because of these results, a broad plan of study has been outlined with a determination to discover as soon as possible the value, if any, of this

extract in cancer. Until such time as additional data become available, we wish to impress on the medical profession the fact that the work to date, although quite promising, is still in the experimental stage and therefore decidedly inconclusive. The pathologic studies have been made by Dr. A. M. Moody, pathologist of the St. Francis Hospital.

WALTER B. COFFEY, M. D.,
JOHN D. HUMBER, M. D.,
San Francisco.

February 1, 1930.

DESCARTES WAS RIGHT*

By HARRY M. HALL, M. D.
Wheeling, W. Va.

PART II

Notwithstanding defections from the ranks of those who hold to the old ethics, there are still many left. It represents something akin to the silent vote in politics. This great body of medical men is held together with a rather indescribable, invisible tie that, for want of a better term, I shall refer to as a "gentleman's agreement." It still is very much in existence and will probably be the saving grace of the profession in the time of extreme stress and trouble. This rather remarkable yet intangible force acts automatically, so to speak, in the last analysis, to defend the members of the medical profession against dangers from without. Some day or other, rather soon I think, this element rather reluctant to engage itself in conflict will descend in full force on our notorious detractors and suggest they forget the high cost of medical care until they mitigate some of the preceding causes that lead up to it. Let some of them make instruments cheaper, x-ray outfits less expensive, and other paraphernalia within the bounds of moderation. We must teach the laity it is a dangerous occupation to heckle and disturb the medical profession and that it is a tragic thing to clip our wings. Surely we must have had an efficient and wonderfully capable line of medical men in the past to bring so complex, baffling and obscure a thing as disease up to where it is today. Considering the tremendous amount of work required to establish every shred of information about illness and disease and make it conform to the major pattern of modern medicine, the medical men of the past must have been marvelously endowed. The future should be measured by the past. To make us into a mechanized group of robots would be disastrous. People may be standardized when well, they are all individualists when ill. A machine cannot attend them.

IMPORTANCE OF LEADERSHIP AND LOYALTY

The time has come for the medical profession to pick their leaders with great care. This will involve the rejection of great names as executive officers. Perhaps a way around it would be to create two presidents, one the chairman of a board, the other the regular president. One or the other could be made honorary. The head of a large medical organization should be a militant and aggressive leader, partaking of the qualities of a Roosevelt or a Mussolini without their despotic, autocratic qualities, although to an extent he should have a little of these. Great surgeons and internists, including the specialists, are not necessarily men of such stamp. In fact, they are often the very opposite. Usually they have a distaste for conflict, are given to conservatism and can be found clinging to the thought that to yield is better and more peaceful. Having acquired wealth, fame and almost everything else, they find the world smiling and agreeable. It is next to impossible to ask them to recall their earlier days of privation. It is difficult for them to sense the problems of the modern rank and file. They are old warriors whose eyes have grown dim to the peculiar insults of the hour. They cannot sense the struggles of the minor men of the

* Part I of this paper was printed in the February issue.

profession. Contract practice and state medicine do not seem to them as anything but passing fictions of the day. Great industrialists, often among their patients, are good fellows and cannot have any designs on medicine. They move in an atmosphere of pleasant relations, quiet regularity and very little competition. Other medical men refer work to them; they are called on to address great assemblages; their words are considered the last thing in wisdom; men surrounding them look up to them; they travel, have their social conquests; statesmen, ambassadors, the great and near great consult them; life is surely very pleasant. It would be next to impossible to have them believe that out in the open doctors are being deprived of work, forced to accept reduced wages, are barely making a competence, are being crowded into narrower spheres, are ridiculed in the press and magazines, beset by trivial malpractice suits, having a struggle to preserve their traditions and wondering whither they drift. The problems of the young man just entering medicine stand no more chance of being really understood in their stark and naked truth by these great men than did the fortunes of that other young man seem to have any advantage over the camels passing through the needle's eye. For us to venerate; for us to regard as still great teachers through experience; for us to love; for us to picture as making us scientifically what we are, they are still the old idols. But as to making them active presidents, executives, officers or directors, we believe that is neither wise nor practical. We have some of them now bursting into print with strictures on us which are at times more embarrassing than the laymen give out. Carrying enormous weight, the public counts on their statements as actually the gospel truth, whereas they are really only opinions of single men.

Great names in medicine often perform, heedlessly, great and small infractions of the principles of ethics which we are quite sure appear trivial to them, and so set a bad example to lesser men. St. Paul probably made this clear in his dissertation on not eating what may be poison for the other fellow. When great medical men are solicited to testify to the great health qualities of a cake of yeast or a baking powder they should recall this. The lesser man would not be led to do a lot he does if he did not look on at the great and near great doing it before he does. I believe vanity has a lot to do with it. A great medical man sometimes reflects on history and the dictum, "The king can do no wrong," and he forthwith appropriates the idea. This establishes a precedent and down the line it goes to others who promptly feel if he can do it then it must be all right. If enough do it that particular part of the ethical code goes the way of the Eighteenth Amendment. Christ was led up into the mountain and offered the whole world to succumb. History records that he promptly rejected the offer.

A house divided cannot stand. With our usual lack of foresight, we are dividing. The College of Surgeons, the College of Physicians, the Southern Medical Association, the Interstate Postgraduate Assembly, and numerous other bodies give ample proof of this. Organized, I believe, for scientific purposes alone, they have not adhered solely to this idea. As an example, the American College of Surgeons exercises a control over hospitals. This implies that hospitals are solely surgical. We know this is not the case. It is a function that the American Medical Association alone should carry out. This is no criticism of the College of Surgeons as being officious. It may be they saw the need of it first, and they have handled it admirably. Nevertheless, it is not their duty. I am quite well aware that the argument is advanced that not all of the medical men of the country can gather in one place at one time; that specialists cannot expect the American Medical Association to lend too much attention to their wants and they, therefore, must have their own societies; and, since even the American Medical Association publishes separate archives to meet their requirements, it is just as logical to arrange separate meetings. The surgeons say they

cannot hope to discuss all their problems even when by themselves for the better part of a week. The internists give the same reason. The Southern Medical Association doubtless has its reasons while the Interstate Postgraduate Assembly has a feeling it is fast becoming the largest single gathering of medical men that meets at one time. All these reasons are doubtless correct, and the profession of medicine requires all these associations. However, they are getting to have an uncomfortable habit of flourishing their power, extolling their size and referring to their accomplishments outside of their scientific realms. This is quite human and altogether natural. To those who are responsible for the brilliant performances of these strong and notable organizations, nothing but praise is perhaps due, and I am here referring to these courses solely as to what might happen. A great many medical men who fail to stop and consider realities actually gain the idea that these associations are somewhat competitive to the American Medical Association and not corollaries thereto. Capable of but a single allegiance, they pour out all their loyalty in one direction. It is impossible for them to brook any suggestion that there must after all be but one big single organization to which we must look to settle our several perplexities. None of the members of these organizations can see any harm in too much division. To the most, they are stated as mere side shows to the main tent. I rather gather that this is not so. It occurs to me that a separation into so many groups is dividing our forces—crystallizing our ready solubility from one clear and potent fluid. We shall dillydally around with them until we become like a lot of Balkan states that never know just who is governing them and are destitute of a cohesive army and innocent of a navy, and are on the whole the very quintessence of impotency. And all of us should carry around with us constantly this thought that if anything ever causes the fall of the American Medical Association the demise of all of the others will quickly follow. Probably the American Medical Association should have a banner or a flag and whenever any other medical organization meets it should be unfurled across the stage to remind the audience that united we stand; divided we fall.

INCREASING COMPLEXITY OF MEDICINE

The increasing complexity of medicine is the last subject with which we shall concern ourselves. It is in some ways the most important one of all. American life today insists on pursuing any subject until it is lost in its ramifications. The law makes the simplest case a maze of technicalities. An involved one runs into years with volumes of testimony. Religion, divided into many sects, has become such a labyrinthal matter that no one cares to approach it for simple comfort. Government, especially at Washington, has come near to defeating itself by the excess of its excursions. A tariff bill is an affair of months, an income tax blank too much for any ordinary man. Not so in the powerful and ever increasing industrial scene, where simplicity is the outstanding feature. Thousands are spent to reduce the parts in a machine. Consider your telephone. Lose yourself in wonder over the arc light. Grow eloquent over your microscope.

Medicine is perhaps the most complex of all things. As is time and eternity, so is medicine; as is the geologist and his rock, so is medicine; as is the evolutionist and his story, so is medicine. It embraces all things, considers all things, encompasses all things. It is beyond one mind to fathom. It transcends all efforts to visualize it. To try and place into language the confines of its portentous schemes, its boundaries, its limitations are quite beyond our efforts. To attempt to assemble some simple words that would correlate disease, its etiology, diagnosis, treatment and termination can scarcely be done, nor could a dozen men each taking a division contribute greatly to the elucidation. Medicine is a vast enterprise, a prodigious science, a very involved art. As a single physician gazes at a single patient before him, some-

thing of the stupendous phantasmagoria of medicine rushes before him. It can be well-nigh appalling, and it is well that disease is inclined to appear in a more simple form as commonly seen. But in that single patient before him, what dreams may come, what possibilities there are for all those other thousand maladies to bear down. No wonder the individual doctor lifts his eyes to "that inverted bowl" for counsel, to find it not. No wonder he seeks consultation. No wonder he gathers in groups. No wonder he assembles clinics. No wonder he rushes to foundations. Rebecca in Ibsen's "Rosmersholm" killed Mrs. Rosmers by constantly suggesting to her the nature of her defects in meeting her duties. The wife jumped into the mill race. The enormity of medicine is killing off the single practitioner in the same manner.

I believe that it is generally conceded that one can absorb so much of a subject, after which the brain falls. In making out programs for medical gatherings this is lost sight of entirely. So we have the spectacle of almost a week of addresses from eight until nine with intermissions for meals. Again we have the circus idea, three rings and look at what you like. Few minds can retain what they receive in such a scientific festival. The span of life to most active men, as far as medicine is concerned, is doing well if it is forty years. As one stands almost like a child on the shores of medical life and gazes on the mighty seas of medical literature, medical knowledge and medical practice, no wonder one feels like a lone atom or a mere pigmy, a tiny unit in the cosmos. With medical societies multiplying; medical meetings in the city, state, country, and even abroad, on the increase; medical requirements born as were the leading characters in "Pigs Is Pigs"; rules, penalties, laws, standards, codes, tables, statistics, calories, calculations, tests of function, laboratory schemes, blood chemistry, biochemistry—is it any wonder one human mind, convoluted as it is, reacts in rebellion at the tremendous load? The logical result of all this is to give some doctors an inferiority complex. Many doctors die of cardiovascular disease, but the etiologic factor in the form of incessant worry that caused their malady was none other than the sense of inadequacy they gave up to, after realizing the utter vastness of their calling. Because we have all come to sense the unlimited confines of our vocation, many medical men are unwilling to trust to their individual judgment any more. This naturally leads to many consultations in which there are specialists on many subjects. To obviate the spread, the group was created. The group likewise must fall back on men from greater groups. Naturally, too, this contributes to the high cost of medical care. However, it results in no higher fee to the original physician. It is very evident that we can have too much discussion of a case, carrying it to where the perplexity is greater than ever and the patient may die in the process. Doctor Butt, a West Virginian, once wrote a paper on gastrotomy in relation to a young man who had eaten frozen apples and cabbage and then drank water. In this, he remarked that had he held consultation instead of making up his mind individually to operate, the patient would have died. In numbers there is safety is undoubtedly true, but it has its limitations.

So medicine will have to be simplified. Its literature, its nomenclature, its activities will have to undergo revision sooner or later. Physiologists and pathologists must bear a heavy load of responsibility in the next decade. It has been said the test of the medical profession in the future will be, "Is surgery still existent after fifty years?" If by that time we have not found the means to kill the pyogenic bacteria—streptococcus and staphylococcus—as well as the cause and the elimination of cancer, we will have suffered a grievous failure. If we cannot reduce metabolism and biochemistry to more simple terms, then, I would say, something is radically wrong with us.

Hospitals with a thousand beds, medical centers that look like medieval cities, diagnostic clinics the size of hotels, laboratories that resemble railroad

terminals make us look like a vast enterprise. Some day simplicity will come like a tornado and level them all.

CONCLUSION

In conclusion, I feel that this narrative must have sounded its share of discordant notes and revealed a melancholy outlook. I feel as I end it, like the ghost at a feast. To arraign even lovingly the faults and failings of the profession we venerate breathes the air of ungratefulness. There is something unpleasant about the actor that plays the character of filmy nothingness. The part calls for a stalking grimness, a seeming lack of substance, a cold clamminess, and always one must be pointing—always pointing—at the foibles of the other guests, with a sort of bony finger from a hand that none can grasp. But ghosts have slain their Macbeths—although not directly. To have given some of the views of this recital has cost me some grief and sorrow, and not a little perturbation. Had I not had affection for over thirty years for the medical profession and am ever jealous of its honor, I could never have tried to mirror some of my own inconsistencies. We must always to our own selves be true and be courageous enough to examine ourselves, as we are frank about confessing our errors in the performance of our duties. So I believe the several things I have related to have some part in our unrest. My judgment is anything but infallible, but there the matter rests. To us, the man to be feared is the one who says, "Always with a smile" and that all our ills will eventually right themselves. To us, he is an incubus.

We may be in for a period of partial eclipse, but be that as it may we can always count on enough hardy souls to affect a renaissance. We may be too deeply involved in some of our obsessions to extricate ourselves at once. We may see state medicine, although I strongly doubt it. We may see our hospitals, our work and our followings taken from us and controlled by large units. I doubt that, too.

Notwithstanding the character of what has gone before, our great passion is that the medical profession, taking it by and large, is the greatest intelligent unit in civilization today. The purport of this whole paper is a deep chagrin at our not being the chief controlling factor in the world's affairs. It appears to me that we alone seem to understand the meaning of humanity. In modern dramas and in present-day literature it seems to me that it is the medical man when he appears who alone has a great compassion and understanding for all the other characters.

Picture a world if you can where all the doctors of today, ministering as they are at this very hour, were suddenly eliminated, and in their place were machine-like personages that sought from files and indexes the precise methods of approach, with personality eliminated. It is unthinkable. When the crucial time comes, if it ever does, I feel that the great medical solidarity will be found with capable leadership in the perfected organization of a greater and more unified American Medical Association; that industrial interference will come and go; contract practice appear and disappear, and state medicine attain a growth only to sicken like a weed. Medicine is too old a custom for anything to long stop its progress, arise what may, for nature and evolution, progress and civilization have embraced medicine as a brother of their blood. You can no more block it now nor change its destiny than you can that of existence. Medicine has become a very member of the integral body of life itself. The martyrdom of all the great figures of its past has seen to that. Concentrate on it as you may it will ultimately appear unscathed, for there is something indestructibly valid about it. Unfaithful as some few of its followers may be to the meaning of its finer truths, all will subscribe to its authenticity. To those who have embraced it, some sense of immortality surrounds it. Hardened as any doctor may become to its altruistic prophecies, he never seems to lose a clinging sense of its subtle proofs of somewhere having a great destiny. What

else can so subscribe? I know of nothing. So on this rock we found our hopes and yearnings. Whatever happens, back we will come, stronger, more vibrant, more invincible, more powerful than ever, led, it may be, by some great voice from among us filled with the intense clairvoyancy of Descartes, and proving that he was right when he said:

"If ever the human race is lifted to its highest practicable level intellectually, morally and physically, the medical profession will perform that service."

DISCUSSION OF PAPERS OF DOCTORS HALL AND MCBRAYER
(IN PART ONLY)

Dr. George H. Kress, Los Angeles: Doctor Hall has given us a very keen analysis of certain conditions which are of vital importance to the future of medical practice in America. I wish to thank him for this splendid analysis and also for the suggestions of future action which are indicated both in and between the lines of his paper.

He tells us of conditions as he has observed them in the industrial State of West Virginia. His picture fits in very well with some of the experiences we have had in California. We have been much distressed with certain drifts in medical practice in our state, and the officers of the California Medical Association have given considerable study to ways and means whereby undesirable features of modern-day medical practice might be overcome.

One of our officers, Dr. Walter Coffey of San Francisco, recently brought to our attention a plan that seemed to us to have many commendable features.

As we see this problem, the well-to-do citizens and very poor citizens are almost always assured of good medical care. The rich can choose whom they desire for medical advisers, and the poor receive a very high grade of medical care from members of the attending staffs of public hospitals. The in-between class of citizens, the so-called white-collar brigade, seem to be the greatest sufferers, because with the present high cost of living, with all its modern-day comforts and luxuries, there is usually very little money left to pay hospital expenses or doctors' fees. If a plan could be put into operation to give proper care to this class of citizens, much of the cry about the high cost of medical care would not be heard.

The opening editorial of the November issue of our official journal, California and Western Medicine, is a statement which I was instructed to write by the Council of the California Medical Association, and which is entitled "A California Plan to Combat State Medicine—Important Notice."

That was a somewhat high-sounding caption, but it was used to call the attention of members of the California Medical Association to certain drifts in medical practice and to caution individual members to make no contracts, because the Association's officers were considering ways and means of safeguarding the rights of all members.

In the plan proposed by Doctor Coffey, who is the chief surgeon of the Southern Pacific Railroad, and which he submitted as a basis for discussion, it is proposed to bring into being an organization that will act as the trustee or business agent of its members. These members will send their bills for professional services to the trustee organization, which organization will collect from employers the money which will guarantee skilled medical care to employees and the families of employees. The employees are to be permitted to make their own choice of physicians as at present. In other words, every effort will be made to continue private practice along the same lines as at present, except that the central or trustee organization will collect the moneys and then reimburse the physicians.

Our legal advisers are making a study on different plans whereby such a central or trustee organization may be brought into being. There are, of course, many obstacles facing us, but our Association is prepared to spend money to find out ways and means whereby the interests and standards of medical practice may be maintained in California. There seems to be a general impression among the officers of the California Medical Association that if the medical profession does not find a solution of some of these problems that some kind of a plan will be thrust on it under lay influence and domination, and which could be so harmful that medical practice, as we now understand it, would receive a serious blow.

We are not prepared to give out details concerning the plans we have in mind because they are still in what might be called a preparatory stage. We are hopeful, however, that we may be able to devise ways and means that will place scientific medicine in its proper place before the citizens of California. We believe it will be possible to give the highest type of medical and surgical service to citizens of less than \$2500 yearly income, at the same time protecting in fullest measure the rights of the individual practitioner, and permitting also the development of a stronger and larger California Medical Association. We have no desire to engage in reckless experiments, but we are convinced that something must be done, and that talking in the abstract or in platitudes will not solve our problems. We intend to carry on our investigations. If we can find a legal and ethical plan of organization that will permit us to maintain medical standards, and also protect the economic interests of

physicians, while at the same time we can give as good and, we hope, a better service to the patients under discussion, then it is our intention to use our best endeavors to put such a plan into operation. If that should come to pass, our state journal will give ample publicity to the matter.

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Dr. H. O. Reik, Atlantic City, N. J.: In my humble opinion as an editor, these are the two most remarkable contributions that have been made to this conference of secretaries and editors during the past several years.

I have no intention of trying to discuss the various problems introduced in those papers. I think that the two papers give us food for thought for a long time to come, because they express so clearly and so succinctly the great problem that confronts the medical profession today; a problem which is not duly appreciated by the vast majority of the members of the profession. I wish it were possible to compel every practicing physician to read both these papers.

While I cannot, because time does not permit and I haven't the ability to, discuss the technical details of these papers, I do want to take advantage of the opportunity to pay a tribute of respect to the two authors. I appreciate Doctor McBrayer's temerity in offering a solution, which is apparently a good one; it may be the correct one, the best one. That remains to be seen. His reference to President Harris' several papers on this subject is timely, and we should pay attention to them.

I want to pay even a higher tribute of respect, if Doctor McBrayer will permit, to Doctor Hall for the presentation of his paper. He is the first man, I think, among us who has had the courage to stand here and tell us not only the truth, but the whole truth. He must have anticipated when preparing the paper that he would give us entertainment and amusement in his criticisms of big business, but he must also have anticipated that he would make us squirm when he criticized members of the profession and their acts, and it is for that particular part of his paper that I want particularly to express thanks. This morning, at the breakfast table, I confessed to my chief that I have in my desk several papers and editorials, some of which represented my best thought, that I had not had the courage to print. Doctor Hall has given me some moral support today. I think he is the "noblest Roman among us all."

PUBLIC POLICY AND LEGISLATION

In the current issue of CALIFORNIA AND WESTERN MEDICINE is printed an editorial dealing with narcotic laws, and therein the suggestion is made that members of the California, Nevada, and Utah medical associations write to their respective Senators and Congressmen to secure copies of the proposed Porter Narcotic Law, which is known as "H. R. 9054." For the convenience of members who wish to cooperate along this line, the names of the Senators and Congressmen from these three states are here printed. An easy method of address for United States Senators or Congressmen would be as follows:

Hon. Hiram W. Johnson
U. S. Senator from California
Washington, D. C.

Hon. Clarence F. Lea
Congressman from California
Washington, D. C.

* * *

CALIFORNIA

Senators

Hon. Hiram W. Johnson of San Francisco.
Hon. Samuel M. Shortridge of Menlo Park.

Congressmen

Hon. Clarence F. Lea of Santa Rosa.
Hon. Harry L. Englebright of Nevada City.
Hon. C. F. Curry of Sacramento.
Hon. Florence P. Kahn of San Francisco.
Hon. Richard J. Welch of San Francisco.
Hon. Albert E. Carter of Oakland.
Hon. Henry E. Barbour of Fresno.
Hon. Arthur Monroe Free of San Jose.
Hon. W. E. Evans of Glendale.
Hon. Joe Crail of Los Angeles.
Hon. Phil D. Swing of El Centro.

NEVADA

Senators

Hon. Key Pittman of Tonopah.
Hon. Tasker L. Oddie of Reno.

Congressman

Hon. Samuel S. Arentz of Simpson.

UTAH

Senators

Hon. William H. King of Salt Lake.
Hon. Reed Smoot of Provo.

Congressmen

Hon. Don B. Colton of Vernal.
Hon. Elmer O. Leatherwood of Salt Lake City.

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. III, No. 3, March 1905

From some editorial notes:

... *Our State Legislators.*—It is rumored that the legislators at Sacramento have gone crazy, and there seems to be some ground for the rumor. The anti-vaccination bill passed the Senate and we learn that it is very liable to pass the Assembly though, at the time of writing, the final result is not known. . . .

... *Bind Your Journals.*—Do you not wish to have your volumes of the journal bound and preserve them for future reference? Remember, these volumes are the full transactions of the state society and also the transactions of most of the county societies.

... *Danger in X-Ray Exposure.*—A warning against the haphazard and indiscriminate use of the x-ray by inexperienced operators seems particularly opportune at this time, as the lay press of San Francisco has so recently published the case of the unfortunate Mrs. Fleishman-Aschheim, whose arm was amputated, a few weeks ago, for an epitheliomatous degeneration caused by repeated exposure to these rays. Dr. Philip Mills Jones, the pioneer of this work on the Pacific Coast, suffered from x-ray burn of the hand as early as 1896; and though in 1900 he gave up this work entirely, even at the present writing trophic and degenerative changes are going on in that important member of his anatomy. . . .

... *The Relation of the American Medical Association to Medical Advertising.*—(A Statement by the Publication Committee).—Probably only a few of the members of our society know that the advertising pages of the *Journal A. M. A.* have been the subject of criticism almost continuously for more than ten years past. That our members may know that we have not acted alone nor without sufficient consideration in the criticisms which have been made in the state journal, it has been thought wise to place before you a brief summary of the facts as they are to be found recorded in the pages of the *Journal A. M. A.* . . .

From an article on "Neurasthenia in Childhood" by Hubert N. Rowell, M.D., Berkeley:

We are indebted to the late Dr. George M. Beard for the first comprehensive description of this disease, which he presented some twenty-five years ago. In so doing he adduced nothing original, and nothing which had not been observed by others, decades before; but, grouping an array of nervous phenomena into one composite photograph, he introduced into our nosology the term "neurasthenia" in lieu of what had formerly been known as nervous prostration or nervous exhaustion. . . .

* This column aims to mirror the work and aims of colleagues who bore the brunt of state society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

From an article on "The Surgical Treatment of Chronic Tonsillitis" by J. A. Black, M.D., San Francisco:

For many years this subject would cover but a small space on paper, as it was considered that the surgeon had done all that was required of him when, by means of a tonsillotome, he had removed what showed of an hypertrophied tonsil, and probably with it a good portion of the anterior or posterior pillars, creating so much of an after-disturbance in the throat that no singer or public speaker would submit to removal of the tonsils for fear of a total or partial loss of the speaking or singing voice. . . .

From an article on "The Effects of Tonsillotomy" by W. B. Stevens, M.D., San Francisco:

The effects of tonsillotomy naturally fall into two groups:

First—The immediate or those closely succeeding the operation, and which are for the most part transient; and

Second—The ultimate, which are more or less permanent. . . .

From an article on "Some Remarks on Gonorrhea in Women" by Beverly MacMonagle, M.D., San Francisco:

The fact that gonorrhea produces the most serious and profound changes in the pelvic organs cannot be too strongly insisted upon.

Its frequency is difficult to state; it varies, both in localities and in great cities, within wide limits, so that it is impossible to formulate any statement that can have any general application. . . .

From an article on "Flies as Carriers of Contagion" by George H. Aiken, M.D., Fresno:

For a physician to have presented this subject to the medical profession twenty years ago would have been to invite ridicule with criticism, but thank God we have made advancement since that time. . . .

From an article on "Aseptic Catheterization of the Urinary Passages" by M. Krotszyner, M.D., and W. P. Willard, M.D., San Francisco:

In treating the subject of aseptic catheterization, we must consider the sterilization of catheters, the preparation of the urinary channel, and the introduction of the instruments in an aseptic manner. . . .

From an article on "The Sanitary Needs of the State" by N. K. Foster, M.D., Sacramento:

That government best serves its subjects which gives to them the largest measure of protection in all their rights and privileges. If "life, liberty and the pursuit of happiness" are inalienable rights, the means of acquiring and preserving them are also. . . .

From miscellaneous items:

"Mother Mary." Now, who is this Mrs. Eddy? She is Mrs. Mary Moss Baker Glover Patterson Eddy. Mrs. Eddy has had three husbands, and the last one, she says, "died of arsenical poisoning mentally administered." . . . —Dr. O. T. Osborne. . . .

An Opinion From Virginia.—"We are very much in sympathy with that excellent and high-class publication, *The California State Journal of Medicine*, in its severe arraignment of the *Journal of the American Medical Association* for ethical laxity, if not for its gross violation of ethics. . . .

. . . —*The Southern Clinic* (February, 1905). . . .

From Medical Society Reports:

Pasadena Branch, Los Angeles County.—At a meeting of the Pasadena branch of the Los Angeles County Medical Association at which there were thirty members present out of an enrollment of forty-two, the

following resolution was presented by Doctor Bridge and unanimously adopted by the section:

Resolved, That it is the sense of this section of the Los Angeles County Medical Association that the existing medical law should be left on the statute books as it is and that no further medical legislation should be enacted at this session. . . .

. . . The exaugural of Dr. F. C. E. Mattison was on the "Relation of the Physician to the General Public." Doctor Gaspar Miller of the William Pepper Laboratory, Philadelphia, was present and spoke instructively of the effort of Philadelphia to get a better milk supply. . . .

Placer County— . . . By the resignation of Dr. R. F. Rooney from the secretaryship of the society, which position he has held since the organization was first started in 1889, its members lose an officer whose untiring energy, straightforwardness and high ethical principles have been the means of bringing this society to the successful position it now occupies. . . .

San Francisco County— . . . The committee appointed to consider the advisability of establishing a milk commission reported as follows: . . .

. . . 1. There shall be a milk commission of the San Francisco County Medical Society, whose duty it shall be to examine milk submitted to them by dairymen and certify as to the result of such examination, with the object of obtaining pure milk for infants and invalids. . . .

Shasta County— . . . Resolved, That the Shasta County Medical Society hereby reaffirms and emphasizes its belief in proper vaccination as a protection against smallpox, and that it is further of the decided opinion that inoculation with pure vaccine virus, followed by cleanliness of the wound with good sanitary surroundings, is an entirely harmless and innocent measure. . . .

DEPARTMENT OF PUBLIC HEALTH

By W. M. DICKIE, Director

Rocky Mountain Spotted Fever Vaccine Available. Dr. R. R. Parker, special expert, in charge of the United States Public Health Service Rocky Mountain Spotted Fever Laboratory at Hamilton, Montana, advises that Rocky Mountain spotted fever vaccine for 1930 will be available for distribution from that laboratory shortly after February 1. The same plan of distribution will be followed as during previous years, namely, the vaccine will be forwarded directly to physicians upon application. The amount available will likely be considerably greater than heretofore.

1. The vaccine is furnished to physicians without charge, and it is hoped that any charge for administration will be nominal.

2. Requests for vaccine should be addressed to the Officer in Charge, United States Public Health Service, Hamilton, Montana, and should specify the number of persons for whom vaccine is required.

3. It is desired to make the vaccine available to all who wish to take it. However, it is expensive to manufacture, and although it is expected that vaccine can be supplied in any amount likely to be required, at the same time it is desired to avoid wastage. Physicians are likely to base requests on the amount used in the year just past. This is not a reliable index since experience has shown that local demand in most instances is in direct proportion to the local prevalence of cases, which is a variable factor. Therefore, in order that the most advantageous distribution of the vaccine may be made it is suggested that requests be conservative, and repeated several times if necessary, in order that physicians may not find themselves with considerable amounts of unused vaccine at the end of the season as has sometimes happened, especially in

1929. Requests can usually be filled the same day as received and, if wired in, there will be but a short delay in receiving the vaccine.

4. Full directions for administering the vaccine accompany each lot forwarded.

5. *It is earnestly requested that the Hamilton Laboratory be informed of any case of spotted fever occurring in a vaccinated person and that the attending physician keep as detailed records of the case as circumstances permit.* Information by wire is desired if possible, so that, if feasible, a representative of the Hamilton station may visit the case concerned.

Pork, Insufficiently Cooked, Causes Trichinosis.—Since Christmas, twenty-five cases of trichinosis, due to eating pork which was not thoroughly cooked, have been reported in California. The State Department of Public Health has issued a warning urging that all pork used for human consumption be cooked until it is thoroughly white with no sign of red meat. At this season of the year, when pork is used in large quantities, cases of this severe and painful disease occur with considerable frequency. Some cases occur among certain foreign-born residents who are in the habit of eating raw ham and raw sausage. The trichinosis death rate is very high among such individuals. Very often roast pork is served teeming with red juices in the center of the piece, while the surface portion is well done. Care should be taken in cooking pork sufficiently long to insure that it is thoroughly cooked throughout. A temperature of 160 degrees F. will readily destroy the parasites that cause trichinosis.

Symptoms of the disease generally occur between the seventh and tenth day after eating the infested meat. Symptoms of trichinosis generally begin with fever, diarrhea, and other intestinal symptoms, followed by pains in the muscles and joints. The onset of these pains is coincidental with the enlargement of the embryos of the parasites in the muscles. The ankles and eyelids become swollen. The fever may be continuous and it may last for several weeks. Public health authorities recognize that the inspection of pork meat is of no advantage in the prevention of trichinosis. The only feasible method of prevention lies in thoroughly cooking all pork products before eating them. Cases of this disease reported during the past week have occurred in San Francisco, Alameda, Oakland, and Petaluma.

During the four weeks ending January 11, 1930, seventy-two cases of trichinosis were reported to the State Department of Public Health. All of these cases were due to the eating of undercooked sausage.

Control of Venereal Diseases Is Important.—The Public Health Service has continued its efforts to reduce the prevalence of venereal diseases, through cooperation with state and local health authorities, by the carrying on of educational work and the conducting of research in problems related to the treatment and control of syphilis and gonorrhea. New activities recently undertaken included an investigation of the syphilis problem among rural negroes in the southern states and a campaign for prevention of venereal diseases among seamen in the American merchant marine and other beneficiaries entitled to treatment in the hospitals of the service.

State health authorities reported a total of 195,559 cases of syphilis and 156,544 cases of gonorrhea for the fiscal year 1929. Clinics operated under state supervision reported 120,315 new patients and 2,128,417 treatments.

Births, Deaths, and Marriages Increase.—The increase in the number of births, deaths, and marriages in California is commensurate with the increasing population of the state and each year the activities of the Bureau of Vital Statistics of the State Department of Public Health thus become more extensive. Four hundred thousand birth, death, and marriage certificates have been filed with the State Department of Public Health during the past two years. The

state index of births, deaths, and marriages which occurred since 1906 now contains more than five and one-half million names. The name of the child is indexed, as well as that of the father; the name of the bride and also the name of the groom; the name of each decedent is also indexed.

The demand for certified copies of records comes from a wide variety of sources. The bulk of them, however, are received from attorneys, veterans' welfare organizations, organized charities, police departments, insurance companies, interested relatives and individuals. Detailed tabulations of births, deaths, and marriages are available at all times. A careful study of the vital statistics of the state reveals the social trend of the population and provides a reliable index for the direction of activities in the prevention and control of disease, as well as activities that may lead to the betterment of faulty social conditions.

CALIFORNIA BOARD OF MEDICAL EXAMINERS

By C. B. PINKHAM, M.D.
Secretary of the Board
News Items, March 1930

Of interest to every practicing physician in the state is the case against Dr. S. S. Kalman, Roseville physician, which was disposed of yesterday in the court of Don L. Bass, Justice of the Peace for Roseville. Doctor Kalman was charged on December 25 with illegal possession and sale of narcotics, the alleged evidence being based upon a statement by a certain narcotic addict, who was apparently being employed to trap physicians by well simulated physical anguish, while successfully concealing the fact that he is an addict. Doctor Kalman was at first held for trial before the Superior Court, but investigation developed that his possession of narcotics was wholly legal and rather less than the average for practicing physicians. It further appeared that his administration of a minimum dose of pantopan to the patient in question was neither illegal nor improper, but he was held to have committed a misdemeanor in the fact that he did not report the treatment to the enforcement board and the case was remanded to the Justice Court for hearing on that basis. Doctor Kalman readily admitted that he was at fault in failing to make the report and paid the fine assessed by Judge Bass. The case involves rather a close point of law as to what constitutes a reportable and a nonreportable treatment. As the amended law was enacted by the last legislature, there is as yet no court decision to define this point. Until the courts have cleared up this point, physicians will only find safety in refusing to alleviate the sufferings of transient patients, or if it be done, the physician must declare the patient to be an addict . . . (Roseville *Tribune*, January 15, 1930). The records show Dr. S. S. Kalman was fined \$100.

Following a hearing before the board on a charge of alleged illegal operation, the license of William A. Lang, M.D., Long Beach, California, was revoked by the Board of Medical Examiners, February 4, 1930.

The license heretofore held by George E. Darrow (Azusa, California), to practice as a physician and surgeon in the State of California was revoked at the regular meeting of the Board of Medical Examiners held in Los Angeles February 4, 1930, after a hearing based upon charges of illegal operation. (Previous entries, September, October, and December 1929.)

The license of Wilson McKenery Moore, M.D., Los Angeles, called before the Board of Medical Examiners for violation of the terms of his probation, was revoked February 5, 1930, after a formal hearing before the board. (Previous entry, September 1929.)

The license of James A. Hadley, M.D., revoked March 1, 1928, was restored by the Board of Medical

Examiners February 5, 1930, and Doctor Hadley was placed on probation for a period of five years, during which time he is not to have or apply for either an alcohol or narcotic permit.

Superior Judge Johnson, in a recent decision, sustained the action of the Board of Medical Examiners in revoking the license of Fred B. Tapley, Marysville physician, July 17, 1929. (Previous entries, September and November 1929.)

The Federal Grand Jury today returned an indictment naming Dr. I. Jesse Citron, Beverly Hills physician, in thirty-one counts, charging sale of narcotics to Alma Rubens, film player. . . . According to Assistant United States Attorney William Gallagher, the new indictment naming Citron places emphasis on the asserted bartering in morphin with the stricken movie actress. The indictment charges that on thirty-one occasions the physician sold morphin and cocaine to Miss Rubens illegally (Hollywood *News*, January 24, 1930). (Previous entry, September 1929.)

After partially hearing the charges against Dr. Fay E. Cramer, Inglewood physician, the Board of Medical Examiners continued the hearing to the July meeting to be held in San Francisco.

Charged with practicing medicine without a license, Dr. John P. Shepherd, operator of the Hillside Sanitarium in Rincon Valley, was arrested today by J. W. Davidson, special agent of the State Board of Medical Examiners. Shepherd was released on \$250 cash bail posted with Justice of the Peace Marvin T. Vaughan here. . . . According to Davidson, Shepherd produced no records to show that he is a licensed practitioner. The method of treatment used at the sanitarium, which specializes in tubercular cases, is known as the "Vapor" method, Davidson said. Doctor Shepherd established the sanitarium here last August, coming here from Arizona where he had been associated with another physician, according to Davidson. Shepherd told Davidson that he was licensed in eastern states and that he was graduated from a Philadelphia medical college (Santa Rosa *Republican*, January 27 1930). Failing to find that anyone by the name of John P. Shepherd had filed an application, on October 18, 1929 and January 25, 1930, the secretary of the Board of Medical Examiners wrote John Shepherd, asking for his medical credentials, but as yet has not been informed.

Dr. Arthur C. R. McCown, arrested in Oakland last Friday, charged with violating the State Medical Practice Act, was accused today of masquerading under false credentials as a physician. The accusation was made by Dr. Arthur C. McCown of St. Helens, Oregon, who was robbed in January 1928 of his University of Oregon Medical School diploma, a first lieutenant's commission in the Army, and narcotic requisition blanks. Doctor McCown believes the person apprehended here may be an impostor using his name, it was reported. Theft of the credentials from Doctor McCown was traced at the time to a man named Webb, who used the physician's office as a study. The arrest of Doctor McCown was made in Oakland last Friday night at 9200 A Street. He was taken immediately to San Francisco and obtained his freedom on \$500 bail. Complaint against Doctor McCown was made by Dr. William Agnew of San Francisco, who declared he had turned over his practice to the physician on representation that he was licensed in Oregon. Doctor Agnew, who was planning a trip to Europe, instructed Doctor McCown to obtain a reciprocity license from the State Medical Board entitling him to practice in this state, but discovered that he never made application, according to the complaint (Oakland *Tribune*, January 27, 1930). This individual is reported to have served as ship surgeon with the Alaska Packers' Fleet and made one trip as ship surgeon for a prominent steamship line running from New York to San Francisco.